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DETROIT

Air Conditioning & REFRIGERATION NEWS

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Philco Will Use Premiums Plan In Sales Efforts

Radios For Buyers and Water Chillers For Demonstrations

CHICAGO — All purchasers of Philco "super-quality" refrigerators will be presented with a premium of a kitchen radio, valued at $20, and all buyers of "Advance Design" models will receive a kitchen radio-clock combination valued at $30, according to a promotion program outlined to Philco distributors by James A. Carmine, assistant general sales manager.

"Premiums will have an important part in the Philco refrigerator promotion this year," Mr. Carmine said, —"and to open new markets Philco dealers will present a water-chiller to each person visiting the store and receiving a demonstration on the new 1941 Philco refrigerators during the promotion."

Launching of the new sales-promotion plan will be accompanied by extensive advertising, a wide variety of promotional literature, and the standard refrigerator display and consumer materials.

The kitchen radio and radio-clock combinations have been finished in white, and designed to be placed on top of the customer's refrigerator.

Retailers Oppose Wis. Hours Bill

MADISON, Wis.—Representatives of appliance, furniture, and hardware groups appeared before the assembly labor committee here April 10 in opposition to the Tehan bill, No. 365A, which would provide for a maximum eight-hour day or 44 hours per week and would fix the minimum wage at 30 cents per hour for the first five years and for 40 cents thereafter.

Among those protesting the measure were H. L. Ashworth, secretary-manager of the Wisconsin Radio, Refrigeration & Appliance Association; George E. Wolter, Jr., president of the Wisconsin Retail Furniture Dealers' Association; and H. A. Lewis, executive secretary of the

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Porcelain Enamelers Say They Can Substitute on Most Metals Lost By Refrigerators To Needs of Defense

WASHINGTON, D. C.—The porcelain enamel industry believes that it can provide satisfactory materials to replace aluminum and other vital defense materials in home appliances, especially in electric refrigerators, according to reports just made public by authoritative groups with the porcelain enamel industry.

"The Porcelain Enamel Institute," says a report issued by that group, "operating through its technical committees, has surveyed the field of defense materials, both critical and strategic, and finds many of them can be released by intelligent substitution of porcelain enamel on iron or steel.

"The home appliance field is the most important and the refrigerator is the immediate problem. Ice trays have been made of porcelain enamel. Even a year ago this would have been considered impossible but today, due to technological advance of the industry, it is being done.

"Other aluminum parts such as cooling unit fronts and doors and vegetable pan fronts are rapidly being replaced with enamel-on-steel. The butter storage unit, a new feature in many refrigerators, has quickly been redesigned to use porcelain enamel and meat storage pans and deep trays, some of which have been made of aluminum, have been easily changed back to porcelain.

"The release of stainless steel is important because of its nickel and chrome content. An important saving of these critical materials is being made in cooling units. Porcelain enamel was for years the standard material in this field, but was supplemented by stainless steel in an attempt to reduce service losses due to chipping. Manufacturers who have returned to porcelain enamel are being pleasantly surprised by the great improvement which has been made in this material in the past five years.

"Some food compartment shelves have been made of alloy steels. These shelves can be replaced with properly fabricated porcelain enamel stampings. Such shelves have been used for years in commercial refrigerators.

"In the field of chromium and alloy trim on all appliances colored porcelain enamels have already made rapid strides. Stoves can be made to yield important savings in this field. On

(Concluded on Page 2, Column 3)

ASRE Starts Section In Upper New York

UTICA, N. Y.—Formation of a new section of the American Society of Refrigerating Engineers comprised of men in northern and central New York state was started at a rally held in the Hotel Utica here recently. More than ninety persons attended.

At the dinner which preceded the meeting, Charles Logan, national vice president of A.S.R.E., presided as toastmaster, introducing Dr. Willis H. Carrier, George F. Brenner, Sr., Dan Wile, David Fiske, national secretary, Lars Hansen, and Al Mozier.

Clarence W. Du Bois of the New York State Agricultural Experiment station at Geneva discussed "Farm Refrigeration Methods and Markets," using colored slides made at the station. A paper on wet bulb thermometry was read by Bryon Winborn.

A temporary steering committee was appointed by Mr. Logan to proceed with organization plans.

Carolina Refrigerator Sales In February Well Over Figure For 1940

RALEIGH, N. C.—February household refrigerator sales in the territory of Carolina Power & Light Co. totaled 577 units, compared to 442 sales reported for the same month last year. Range sales also were up, 335 units to 242, but February water heater sales were down to 102 units, compared with 113 in February of 1940.

Sales made by the utility, as usual, were insignificant compared to the sales volume of dealers in the territory. In actual figures, they totaled 6 refrigerators, 28 ranges, 10 water heaters, and 2 vacuum cleaners.

A tabulation of February appliance sales in the territory follows:

Appliance	Unit Sales
Refrigerators	577
Ranges	335
Water Heaters	102
Vacuum Cleaners	200
Washing Machines	416

Fogel Transfers To a New, Larger Plant

PHILADELPHIA — Factory and general offices of Fogel Refrigerator Co. have been transferred to the company's new plant at 5400 Eadom St. here, effective April 1. New plant occupies four and a half acres of ground, and has floor space triple that of the company's former location. Production-line methods will permit enlarged manufacturing facilities in the new plant, which is equipped with a railroad siding.

Philco 1940 Income Was $2,268.568

PHILADELPHIA—Net income of Philco Corp. rose to $2,268,568 in 1940, after all taxes and charges, compared to $1,899,323 in 1939. This is equal to $1.65 a share of common stock, compared with $1.38 in 1939.

Gross sales of all Philco products in 1940 toaled $52,311,131, a gain of 15% over $45,421,078 in 1939, reports James T. Buckley, president, who also said that refrigerator and radio sales in 1940 broke all records.

'Firestone' Is Newest Refrigerator Brand

AKRON, Ohio—A three-model line of electric refrigerators—a 6-cu. ft. leader priced at $99.95, a 7-cu. ft. unit at $129.95, and an 8-cu. ft. model at $149.95—has been added by Firestone Tire & Rubber Co. to the already varied list of auto and home supplies which it merchandises.

Three washing machines priced at $39.95, $49.95, and $59.95 also have been announced by the company.

Both refrigerators and washers are put out under the Firestone name.

Both the new lines of appliances are fully listed in the spring and summer edition of Firestone's home and auto supply catalog, and have already been placed on display and sale in some 200 of the company's controlled outlets.

Distribution of these appliances soon will be further widened, the company expects, by extending the sale of these lines to most of the company's 620 stores and to selected dealers among the 58,000 retail outlets which handle Firestone.

All three refrigerator models feature hermetically sealed units with "only three moving parts," frozen food compartment in the evaporator, and a storage bin in the base.

OPM May Alter Aluminum Quotas

WASHINGTON, D. C., April 14 — Government regulations governing the use of aluminum were modified to permit distribution of more low-grade aluminum to non-defense industries, in an order issued by E. R. Stettinius, Jr., priorities director of the Office of Production Management.

Kelvinator 3-Months Sales Set Record

DETROIT — Sales of Kelvinator electric refrigerators during the first three months of 1941 smashed all existing company records, reports Frank R. Pierce, general sales man-

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5 Firms Raise Prices $5-$10 On Some Units

Changes Affect 7 Models In Philco Line, 'Specials' In Most Others

DETROIT — Price increases of from $5 to $10 on certain models in their 1941 electric refrigerator lines were made during the past week by five major manufacturers.

Philco raised prices on seven of its nine models, the changes affecting all but the two lowest priced units in the line, on which $5 increases were announced about three weeks ago. Beginning with the MU-6 at $119.95 and the MR-6 at $129.95, Philco prices on remaining models have been revised as follows:

MS-6, $144.95; M-6, $159.95; MH-6, $175.00; MR-9, $189.95; MA-7, $199.95; MAH-7, $229.95; and MAH-9, $269.95.

Price increases of $5 put into effect last week by four other manufacturers—General Electric, Hotpoint, Kelvinator, and Westinghouse — applied in the main to the "special" models in their respective lines, although Westinghouse's shift also affected a "six" in the medium price bracket.

General Electric increased the price of its LB-6 to $124.95, a rise of $5 from the former price of $119.95, and a boost of $10 from the $114.95 tag originally placed on the model when the 1941 line was introduced.

Kelvinator raised the price of its SS-6 to $124.75, a $5 increase. This model now is equipped with the "Cold Ban" seal on the cabinet throat, and has been redesignated the SS-6A. At the opening of the model year, this unit had been priced at $114.75.

Westinghouse increased its AS-6 to $124.95 and its B-6 to $149.95, both $5 raises. Both models had previously been raised $5 in February, with the AS-6 originally priced at $114.95 and the B-6 at $139.95 at the time the line was announced.

Hotpoint's raise affected its model 120EA-6, which now is $124.95, an increase of $5 from the previously revised price of $119.95. This model also opened the season at $114.95.

If Greenberg, Di Maggio, Foxx, or Mize Get 'Hot' - - Refrigeration May Be the Cause

ST. LOUIS—When your favorite major league slugger "knocks one a mile" in the baseball season just ahead, the chances are that commercial refrigeration provided by the H. S. Woodard Co. here had something to do with giving the ball that extra "life" that sent it soaring out of the park.

Major league baseballs being turned out by the J. H. Grady Co., St. Louis, are now kept in ample stocks to meet any emergency, and are being better produced since the firm began in December of last year to use Frigidaire commercial refrigeration in one step of their manufacture. How the Woodard company came to sell this equipment is an interesting tale, and illustrative of the many sales possibilities in commercial refrigeration which the dealer can reach, but often cannot "see."

For several years E. J. Lebeau, commercial refrigeration salesman for Woodard, a full-line Frigidaire dealership, had been attempting to sell the Grady company, one of six manufacturing firms who split the entire major league baseball order between them each year, water coolers, air conditioning, and other package items—without much success. Turning out only baseballs and softballs, with a total of something like 45,000 per year, the Grady firm has many employes, and seemed like a "natural" for package air conditioning and water coolers.

On one call, Mr. Lebeau was invited to tour the upper floors of the Grady building, where girl employes power-sew covers on each ball after its skein-wound center is completed. For many years it had been the practice of the baseball manufacturer to wet each leather cover as it was die-cut to the proper shape, and sew the cover on wet—after which it shrinks to glistening smoothness and hardness best for hard usage in the national pastime.

Along with this practice, however, was one drawback; the fact that the leather covers, which come from one firm in Massachusetts, would often dry out before the girls could sew

(Concluded on Page 2, Column 1)

Promotion Must Keep Prospects 'Sold' For Future, Bolin Asserts

CINCINNATI — Appliance manufacturers cannot afford to curtail their advertising and promotional efforts today, even if factories are oversold and the supply is lagging behind the demand, Roger H. Bolin, sales promotion manager of the Westinghouse merchandising division, told a recent luncheon meeting of the Cincinnati Advertisers' club.

Instead of adopting a "do-nothing" attitude toward the present situation, Mr. Bolin suggested that manufacturers make their promotional programs adaptable to meet changing business conditions.

"For example," he said, "'push plans' such as contests for salesmen and other sales stimulation programs, certainly are not necessary. But education to the public and education to salesmen are continuously needed. The advantages of labor-saving and time-saving appliances should be pointed out, and brand selling continued, with less emphasis on the 'buy now' theme. The best way to do it is by advertising. It takes courage, of course, but only by consistent advertising can the future sales volume be assured."

From a promotional standpoint, the best kind of sales promotion now is careful training to enable salesmen to help each customer get the most for his money, based on individual needs, Mr. Bolin said. Such a procedure not only builds loyal customers today, but for the days that are to come as well. In this connection, he added, the Westinghouse "informative labeling" policy, adopted this year for the company's entire appliance line, has met with "rather astonishing success" so far as acceptance by consumers is concerned.

Rising prices will cause consumers to become even more vocal than they have been in the past, Mr. Bolin said. There is also, in his opinion, a definite trend toward "better buymanship," which he defined as a quest by the consumer for means of comparing values and of appraising various goods offered him in the light of his own means and his individual needs.

Desire for more information, Mr. Bolin declared, is a natural one, and appliance promotion should keep pace with, if not actually ahead of, consumer thinking in this respect.

Describing the manufacturer's difficulty under today's emergency conditions, in the light of scarcity of essential materials, priorities, and "the avalanche of orders" being received, Mr. Bolin said that his com-

(Concluded on Page 20, Column 1)

G-E Institute's Food Goes on the Block

The war crept into the annual General Electric conference for editors held recently at Bridgeport when Ada Bessie Swann of "Woman's Home Companion" and George Chapman, assistant manager of the G-E appliance and merchandise department auctioned off food for Bundles for Britain.

'Frozen' Covers Make Better Baseballs

(Concluded from Page 1, Column 2)

them on to balls during rush periods. This held up turnover, resulted in "seconds" which would not come up to major league umpire standards, and were generally unsatisfactory. Water sprayed on both sides of the polished white leather often did not penetrate deeply enough, and the covers could not be soaked because production demanded only damp covers, not ones thoroughly wet.

Refrigeration was suggested by Mr. Lebeau as the practical means of offsetting this problem, with the theme of holding damp cold conditions the year around for all covers needed. The original suggestion was rejected, however, until early in 1940, the Grady company made an experiment of the type.

A home-made cooler, including a galvanized metal insulated box, which would pull the temperature down to 20° F. was first built by the firm, and installed in the upper floor sewing room, where baseballs made with refrigerated covers could be checked against those in standard production. Results were fairly satisfactory, but the home-made refrigerating system proved inadequate.

Informed of these conditions, last November, Mr. Lebeau provided the answer in a Frigidaire four-hole ice cream cabinet, providing automatically controlled refrigeration to keep the temperature down to 10° F. To get the business, Mr. Lebeau made the offer to the Grady company of installing the ice cream cabinet for a 60-day test, the company to pay haulage charges and a small rental if the idea proved impractical.

For convenience, the cabinet was installed in the center of the sewing room, where any stitching-machine operator can quickly step to it for more covers. Covers are now sprayed damp to the right amount, and stored immediately in the cabinet, where they protect the Grady production in two ways—insuring an ample stock of "ready" covers to meet emergency orders for large amounts, and providing a better ball from every standpoint. Glue is applied to the covers while damp, and both glue and wet cover frozen at 10° F.

Since the cabinet must be defrosted regularly, the Woodard company took care of this necessity with four custom-made galvanized metal cans, similar to ice cream containers, which fit into the four-hole refrigerating cabinet, with convenient handles and tight covers. Frost thus forms on the can, instead of the interior of the cabinet, and defrosting is accomplished by warming the cans in outside air once or twice a month.

Approximately 150 covers per can are frozen regularly now by the baseball manufacturer and held as a reserve stock to meet rush orders which arrive from training camps and baseball teams everywhere in the country. Only a few minutes are required to thaw out frozen covers for stitching, and the resiliency of the ball has been markedly increased.

At the end of the 60-day trial period, the company sent its check in full for the cabinet, and has invited the Woodard company to look into the possibilities of refrigeration in making still further improvements in baseball production.

Porcelain Enamelers Claim Substitutes Even For Ice Trays

(Concluded from Page 1, Column 3)

gas stoves a very important saving can be made by using porcelain enameled cast iron for burners to replace aluminum castings.

"Where stainless steel and aluminum have been used for oven liners and broilers, porcelain enameled stampings are rapidly coming back into use.

Washing machines must also yield their share. Agitators, formerly of aluminum, will probably have to be changed to another material. Many substitutes in this field are limited by the capacity of molding and pressing equipment. Porcelain enamel on cast iron is logical for this replacement. There is no shortage of iron foundry capacity or needed materials and skilled men.

"For hot water tanks a radically new development of porcelain enamel processing has made the use of nickel or alloys unnecessary. The 'glass lining' of tanks gives a very satisfactory finish which does not rust. This method not only releases the alloys and nickel used in the higher priced tanks, but will also release considerable zinc where galvanizing was used."

The much discussed question of substitutes for defense materials that have been used in refrigerator manufacture was the subject of a round-table discussion by nine porcelain enamel experts before the recent forty-third annual convention of the American Ceramic Society in Baltimore.

Those participating in the discussion included C. S. Pearce, Porcelain Enamel Institute; J. E. Hansen and C. D. Clausen of Cleveland; B. T. Swely, Chicago; C. P. Scripture and F. W. C. Hutchinson, Frankfort, Ind.; George H. Spencer-Strong, Baltimore; Dr. J. E. Rosenberg, Pittsburgh; and H. E. Ewald, Chicago.

This group declared that the fronts on vegetable trays and handles, freezing unit doors and dummy fronts, butter containers, and decorative trays could all be made of porcelain enamel without any problems.

With reference to the use of porcelain enamel for ice trays, the experts were not so certain that the substitution would work 100% perfectly.

It was pointed out that past experience had indicated that the porcelain enamel trays don't always wear so well under the hammering and banging that most trays get.

However, with some care in their use, it was said, the porcelain trays would work out satisfactorily, and it was pointed out that one manufacturer had already placed an order for 15,000 porcelain trays.

What Substitutes Are Now Being Developed

CHICAGO—Just what materials required in major appliance manufacture have been most affected by national defense priorities, and the steps which manufacturers are taking to develop substitutes, was outlined by B. W. Clark, vice president of Westinghouse Electric & Mfg. Co., in a talk at the recent eighth annual sales conference of Edison Electric Institute here.

Nickel, required in a great many appliance items, such as chrome plating, stainless steel sheets, tubing for electric range units, and other heating units, will only be available in one third of the requirement on original basis of design for 1941 production, Mr. Clark said. As a substitute, manufacturers are using steel with high chrome content and little or no nickel. Range units are one example, the speaker added. This material, which doesn't work as easily as that with a high nickel content, also requires the use of new tools and additional manufacturing operations.

Only about 20% of the 1941 requirement of aluminum will be available to appliance manufacturers, Mr. Clark said. Shortage in this material had not been anticipated, he continued, and as a result manufacturers of electric refrigerators, for example, are now searching for a satisfactory substitute and shipping units with only half the usual number of ice trays. Shortage of aluminum also affected the production of evaporator doors, evaporator shelves, handles, and shelf supports.

Westinghouse alone will save 226,000 pounds on its normal aluminum requirements—sufficient for 22 bombers, Mr. Clark declared. These and other changes in manufacturing processes necessitated by defense demands have cost appliance manufacturers alone $750,000 in tools, dies, and other equipment during the last three months, he estimated.

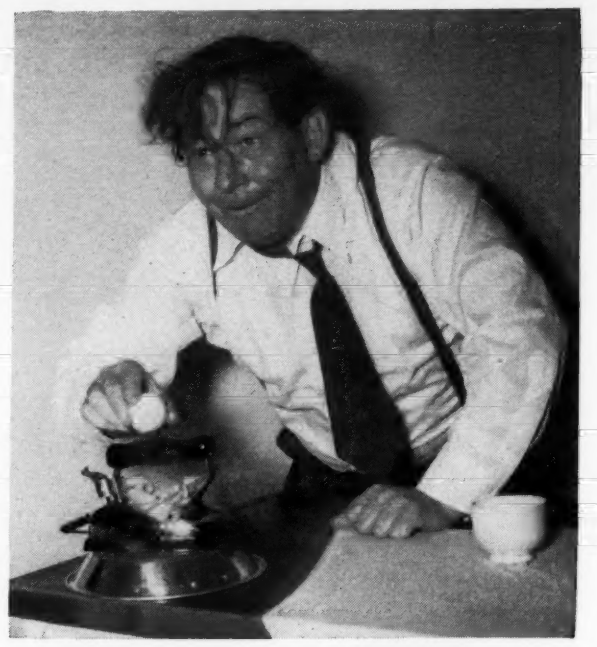
Another shortage is that of zinc, Mr. Clark said, which is used in the manufacture of vacuum cleaner housings and fan housings, among other things. Plastics are being widely used as substitutes in this field, as are cast iron parts. Shortages which may eventually develop, but which have not as yet been felt include magnesium oxide, used for the filler in range units; metallic magnesium, used in die castings, and galvanized sheetings.

Molded plastics are being developed extensively as substitutes for other materials required in production for defense, Mr. Clark declared, but prospects are that a "battle royal" may develop after defense demands level off, since aluminum will be in an extremely strong position, with its production facilities increased many times over what they were when the present situation arose.

Another field which has been advanced by priorities on other materials for defense work is that of heat-resisting glass, Mr. Clark declared. Because of the aluminum shortage, glass utensils are now being developed for use with electric ranges, and are likely to prove quite popular. A further—and interesting—application of glass now in prospect is for waffle grids, where its use would obviate the present urge to lift the lid to see if the waffle is browning properly.

Steel sheets are plentiful, Mr. Clark continued, but here there has developed some problem in obtaining them in the sizes required for most economical production. All these material and production problems have meant increased manufacturing costs—rubber ice trays, for example, being more costly than aluminum.

Sam's Selling Slants



V. E. ("Sam") Vining, merchandising manager for Proctor Electric Co., is the industry's most colorful salesman. This is the twenty-sixth of a series of Sam's famous "Selling Slants" messages to salesmen. An earlier series was published in the News in 1937.

SIMPLIFY

Why hesitate to talk mechanics to a woman?

She is General Manager, Office Boy, and Head Clerk in a complete manufacturing plant, which we call "Home"—equipped with more mechanical appliances and devices than we find in the average small factory.

Every day of her life she plays tunes on a hundred switches to get desired electrical results; she runs a washing machine, a vacuum cleaner, a refrigerator, an ironer, a dishwasher, an electric mixer, a radio, a thermostatically controlled cooking stove, heating plant, and water heater and still finds time to drive her own car, become a bridge expert, and correct her slice on Number One Tee.

She can fix with a hair pin and a rusty nail an appliance that her husband will work over for hours and then take it downtown in his overcoat pocket.

The average man can't even keep a cigarette lighter working.

Sure—mother lets father think he is "head mechanic"—he should occupy some official position in the home.

But—don't be fooled—

The woman *is* interested in our mechanical story, providing we tell a story that is simple, interesting, and—*has a point.*

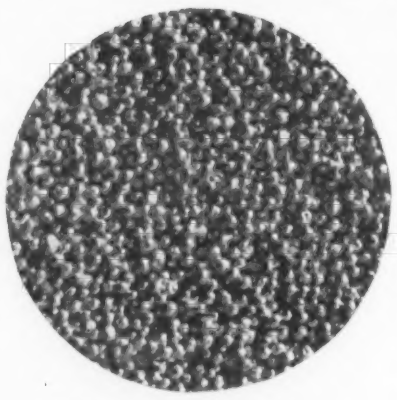
She will follow every step of the way.

Save your technical terms for father. They impress him—tremendously.

But maybe he, too, might like to hear a story he can understand.

AMINCO SUREDRY DEHYDRATORS

Either permanent or refillable models



Section of filter surface—enlarged 5⅓ diameters.

A new method of removing impurities from refrigerants IN SERVICE; provides SURFACE AREA FILTRATION, as well as 70% increased filtering efficiency, because of its ability to utilize the top, sides, and depth of filter discs and cones.

100% FILTER AREA
Reduced Pressure Drop

A correct description of this new filtering principle, delivering 233% MORE capacity than conventional types, is

"Labyrinth" Filtration
—a revolution in filtering efficiency

Made with a one-piece copper shell, without joints or threads to cause pockets or leaks, and filled with Silica Gel, Aminco Suredry Dehydrators present no constriction or impediment to the flow of refrigerant through the refrigerating agent.

Now ready, in sizes to suit every need, Aminco Suredry Dehydrators will be acclaimed a notable advance in the art of refrigeration.

Send for Bulletin No. 23 for complete details of this new development in filtering and dehydrating efficiency.

AMERICAN INJECTOR COMPANY
1481 Fourteenth Avenue DETROIT, MICHIGAN
Pacific Coast: Van D. Clothier, 1015 E. 16th, Los Angeles, Calif.
Export: Borg-Warner International Corp., 310 S. Michigan Ave., Chicago, Ill.

CHIL-KWIK
Refrigerated
★ FLEX-LINE
BEER LINE ASSEMBLY
OFFERS NEW PROFITS TO ALERT REFRIGERATION MEN

This new package item, the Chil-Kwik *"Flex-Line"* *(patents pending) is refrigerated—insulated—flexible and gives positive temperature protection whether it is ten feet long or a hundred.

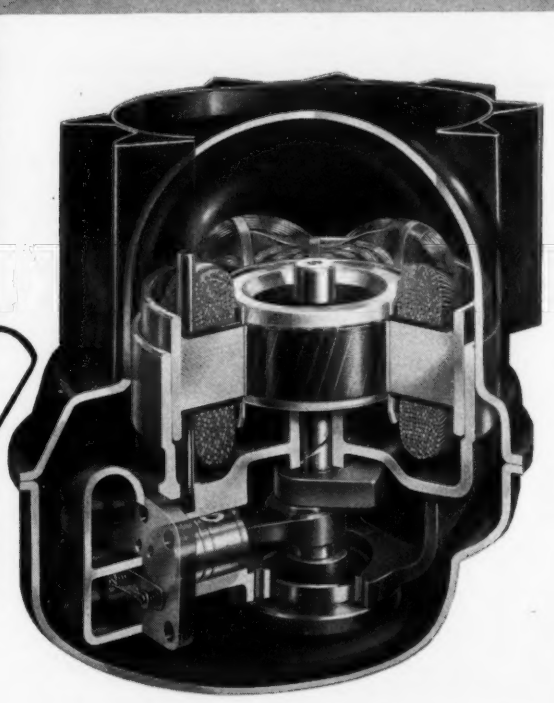
It comes in convenient stock sizes or can be "tailor-made" to fit without cutting or adjusting.

NEW CUSTOMERS—EXTRA PROFITS are going to refrigeration men who feature exclusive *"Flex-Line."* Cash in on this great opportunity—write for details today.

CHILL-QUICK CORPORATION
325 E. Chicago St.
MILWAUKEE ● WISCONSIN

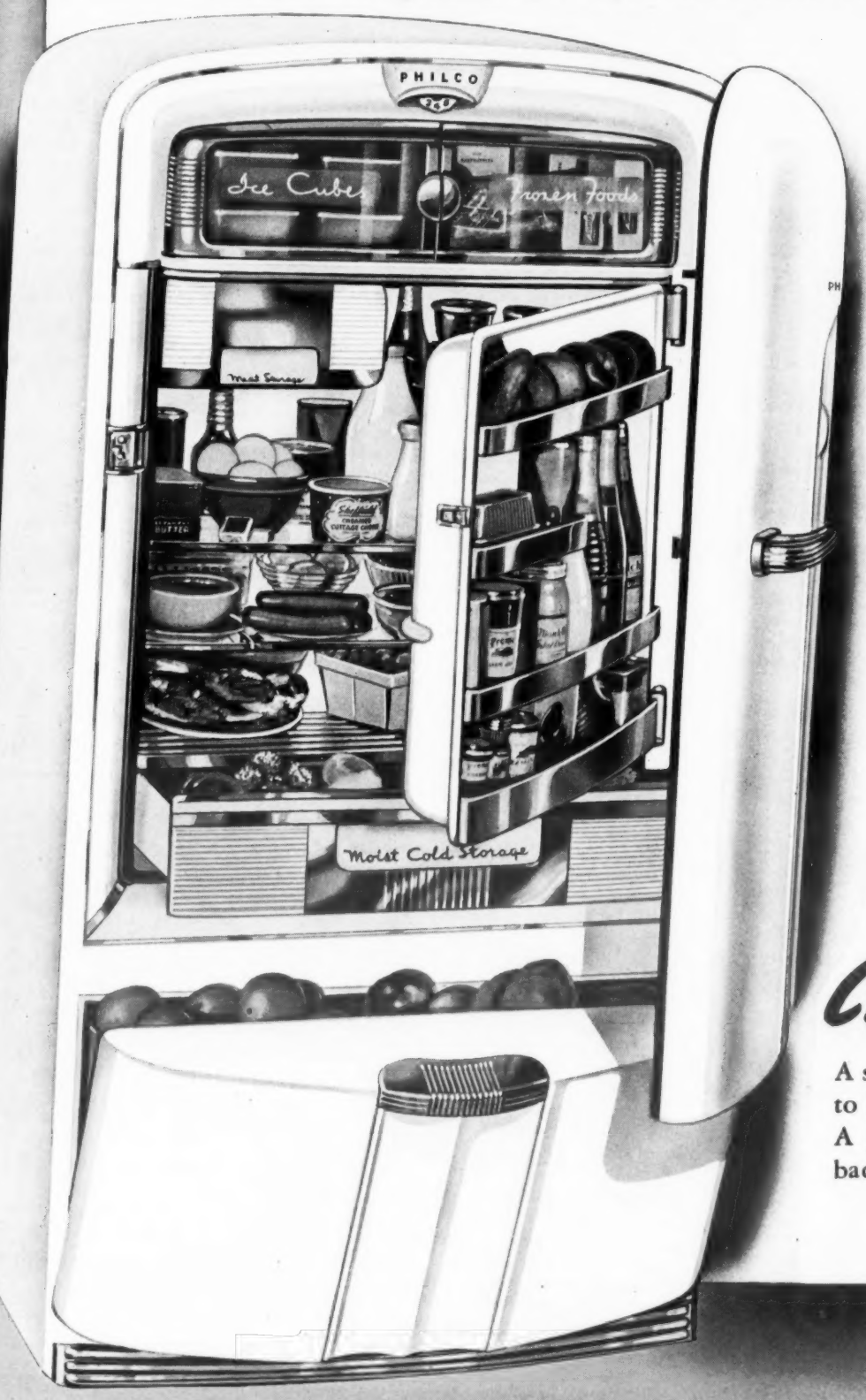
Only the PHILCO Refrigerator gives you the Super Power System and

SUPER FINISH!



Another example of Philco leadership in engineering! Super Finish, the amazing principle developed by the automobile industry to give longer life, greater smoothness, greater economy and quieter operation to your car, is now adapted by Philco to refrigeration. As used by Philco, it is a costly precision process, requiring huge investments in new machinery and new processes. But no process that makes a *better refrigerator* is too costly to fit into Philco standards of quality manufacture.

The result of the use of the Super Finish principle in the Philco Super Power System means to the consumer—LONGER LIFE—MORE RELIABLE SERVICE—LOWER ELECTRIC BILLS. And to the dealer it means Less Trouble . . . Lower Service Expense . . . Greater Satisfaction.



And . . . only Philco gives you the CONSERVADOR, *plus* separate compartments for DRY Cold, MOIST Cold and FROZEN FOODS!

New, exclusive services, new economies and new conveniences make this amazing Advanced Design Philco the greatest, most saleable refrigerator ever built! Brings you the famous Conservador, shelf-lined Inner Door that gives 26% *more quickly usable space.* Separate, complete compartments for both Dry Cold and Moist Cold. A giant-size, separate Frozen Food Compartment for all modern frozen storage uses. Plus many other new ideas and features whose value can instantly be seen and appreciated by the housewife.

March on to bigger refrigerator sales and profits with PHILCO. See your distributor now!

CASH IN ON THE GREATEST REFRIGERATOR PROMOTION THE INDUSTRY HAS EVER SEEN!!

A smashing Philco promotion is ready to burst upon the refrigerator market! A powerful, retail selling promotion, backed by a great Philco advertising campaign. Nothing has been spared to make this the greatest refrigerator promotion the industry has ever seen. Don't miss it . . . get in *now!*

PHILCO ALL YEAR 'ROUND

. . . the Most Valuable Franchise in the Appliance Field!

PERSONALITIES

By George F. Taubeneck

Supersalesman Back From Europe

This page hasn't appeared in a helluva long time. Apparently nobody has missed it, because we haven't had a single complaint about its omission. In fact, one man down in St. Louis thinks we ought never to run it again! Maybe he's got something there.

But this week you're gonna get it whether you want it or not, because the case of Harry Noordberg warrants urgent attention.

Harry, who ranks as one of the greatest salesmen of refrigeration equipment in the world, is back from Europe. Back, almost miraculously.

Harry Noordberg & What He Did

It would be difficult to disprove the thesis that Harry Noordberg has sold more refrigeration equipment of all types than any other man alive. His sales run well into the millions of dollars, despite the fact that he was operating in the commercial hellhole of pre-war Europe.

Certainly he ranks with the leading international refrigeration merchandisers of all time—such celebrities as the late Freddie Lovelock and Frank Hansen (very much alive) of Australia; "Coatless" Tivy of Honolulu; Samuel Schimmel of Palestine; Edgar Carmel (now in New Orleans) and Harry Granary of Paris; Axel Wenner-Gren of Sweden.

During the whole of the turbulent decade just past Harry Noordberg was European Manager for Melchior, Armstrong, Dessau. He covered Holland, Belgium, France, Switzerland, Denmark, Norway, and Sweden.

He represented Nema in negotiating with the French and other governments on import quotas.

He handled every problem of distribution in these government-bureau-ridden lands, from franchising distributors to setting up manufacturers (assemblers) and directing service.

* * *

MAD Had Virtual European Monopoly

When the writer was studying the refrigeration and air conditioning situation in Europe there was one fact which stood out so strongly it almost seemed a law: No matter who the European manufacturer was or where his plant was located, his product really should have borne the Melchior, Armstrong, Dessau label.

All of these foreign machines were assembled from parts sold by Harry Noordberg!

And as sidelines, he has sold automobiles, trucks, phonographs, kerosene stoves, and other miscellaneous items from rowing machines to needles!

* * *

A Tale Which Can't Be Told

Harry's home was in Heemstede, The Netherlands. I visited him there, and saw him in Paris and other capitals as well. He was a Leading Citizen and a cosmopolite if ever there was one.

Though long foreseen, the invasion of Holland by the German army just a year ago (May 10, 1940) took Harry by surprise. He had lingered because he had a job to do and insisted on doing it until forced to desist.

After many long months—a tale which cannot be told here in print—Mr. Noordberg obtained permission from the German authorities to leave the Netherlands and return, with his wife, to the United States.

* * *

At Liberty

Upon arriving on American soil, the Noordbergs went to Huntsville, Texas, to visit Mrs. Noordberg's parents. Her father is Dr. J. W. Thomason; her brother is the American army officer by that name who writes those marvelous Civil War stories for the "Saturday Evening Post."

Mr. Noordberg was ill for some time after his arrival, as you might well understand. Now he is fully recovered and, in the prime of his powers, looking for something to do.

The phrase "At Liberty" has a double meaning for Mr. Noordberg. He does want a job selling refrigeration products, though, and the labor market has perhaps never afforded a better bargain. Just for the record, here is a list of the products he sold in Europe:

Passenger automobiles, trucks, boat motors, outboard motors, motorcycles.

Household refrigerators, refrigeration compressors, coils, and evaporators, ice cream freezers, ice cream cabinets, soda fountain equipment, carbonators, etc.

Refrigerator hardware and fittings, hard rubber doors, lids for ice cream cabinets, etc., door gaskets, temperature controls such as thermostats, pressure controls, etc. Instruments like recorders, temperature and pressure controllers, humidity measuring instruments for lumber, tobacco, cereals, etc.

Expansion valves, automatic and thermostatic; solenoid valves, magnetic, liquid, and suction line valves, high and low pressure float valves, oil separators, water valves, etc.

Air conditioning coils, forced convection units, unit coolers, and room coolers.

Electric motor parts, fractional horsepower motors, electric generators; beer coolers, water coolers; water heaters; oil burners; refrigeration chemicals, refrigerants, oils.

Steel pipe, tube, steel plate for shipbuilding purposes; copper pipe and tube, streamline fittings; refrigerator valves and fittings, manifolds, etc.; tools; rubber belts; oil burner and central heating appliances.

* * *

The Wheel Spins Too Fast

Speaking of supersalesmen reminds us that Jerry Bowen, Dallas representative for the Penn Electric Switch Co., showed a 350% increase in business during 1940!

And that calls to mind a whirl of things that would have been noted here in more interesting detail if this column had been appearing more frequently, items such as:

"Terry" Terhune, Servel's never-runs-down sales manager, was a World War combat flier, and later a barnstormer and even an airplane manufacturer (he patched up smashed airplanes and resold them!)

Charley D'Olive of Stewart-Warner was another combat pilot in the last World War. One of his squadron mates was Winfield Sheean, the movie producer.

L. C. McKesson of Ansul is a Proud Poppa—his first child a handsome son.

Joe Krall of Detroit Lubricator is going to get married a week from Saturday. Guess where he is going to take his bride on their honeymoon: fishing!

Frank Gleason is said to have lost a modest sum playing poker one night in March. This is real news—hasn't happened before in the memory of the oldest Old Timer in the refrigeration industry.

The smelt are running in Wisconsin, and the NEWS staff dined sumptuously as a result of the generosity of Messrs. Higley, Hood, and the rest of the Ansul crowd. Your correspondent, now being married to a good cook, enjoyed smelt for the first time in his life.

Tom Pendergast of Universal Cooler raises popcorn, as well as fine riding horses, on that farm he bought just outside of Marion, Ohio.

J. W. Rubenson, manager of the refrigeration department of the Hawaiian Plumbing & Sheet Metal Co. (distributor for Carrier, McCray, Kerotest, Detroit Lubricator, Alco, Dole, U. S. Gauges, and Clarage fans) and a fine gentleman, recently sent us copies of Honolulu newspapers showing what a real business they are doing there in the Paradise of the Pacific.

Incidentally, Walter Seeger is vacationing in Honolulu right now. But Jack Leonard and his gang are getting so much business that the Seeger Refrigerator Co. of St. Paul can well afford to send its president on so wonderful a jaunt.

C. K. Litman of Koch (commercial refrigerators) tells us that Koch's net billings so far in 1941 as compared with a similar period in 1940 show a 42% increase. Government business accounted for only 20% of this volume. He is proud of the fact that his company—which sells for cash on the line—not only hasn't raised prices, but has even lowered prices on some models. Koch now ships from warehouses, instead of directly from the factory.

And so it goes.

* * *

What They Don't Think of!

From Dr. Bill Hainsworth, chief engineer of Servel and A.S.R.E. vice president, comes an interesting little book, "Beware of Imitations!" compiled from the records of the United States Patent Office some years ago.

Its entire contents are taken verbatim from the patent records, and it is from some of these that we quote below, calling attention to some most ingenious devices which but for this helpful little volume might have permanently escaped our notice.

One which particularly strikes our fancy is described as follows: ". . . My invention relates to improvements in suspenders, having for its object to provide a suspender with a cord so secured thereto or formed therewith as to constitute a part of the same, and to be readily and easily detached therefrom, whereby, in the event of a person being confined to a burning building and having all the usual means of escape cut off, the cords can be disengaged from the suspenders and lowered to the ground to receive a rope, and thus enable the person to effect his escape. . . ." Another is described as ". . . a grocer's sheet metal box constructed in such a manner as to be useful for other purposes (after the first contents are removed) such as a grater, shredder, slicer, and mouse and fly trap."

Throughout our entire industry, I don't know a gageteer who can beat that combination for variety.

Even as early as 1854, under patent 11,942, there was recorded a remarkable little device (our manual shows the accurate drawings and diagrams, too) for removing tapeworms, consisting of a ". . . trap which is baited, attached to a string, and swallowed by the patient after a fast of suitable duration to make the worm hungry. The worm seizes the bait, and its head is caught in the trap, which is then withdrawn from the patient's stomach by the string which has been left hanging from the mouth, dragging after it the whole length of the worm."

Air Conditioning In 1869

While most of us have always dated air conditioning as originating some decades later, we now find that one July 6, 1869, some chap with a vision of the meaning of air circulation invented a ". . . rocking chair, with air blowing attachments," provided with a ". . . bellows, with tracks or rails, on which the rockers, which are fixed close to the seat, may work, instead of on the floor."

One of the simplest ideas recorded, and yet not patented until 1889, was for a locket to hold chewing gum, so that it ". . . may thus be carried conveniently upon the person, and is not left around carelessly to become dirty or to fall into the hands of persons to whom it does not belong, and be used by ulcerous or diseased mouths, by which infection would be communicated by subsequent use to the owned."

Among the many other notable inventions pictured in Dr. Hainsworth's book was a hammock to be slung from and used with the backs of the seats of ordinary railway passenger cars; a foot-warmer which consisted of tubes through which the wearer exhaled (the theory being that feet as well as hands may be warmed by blowing upon them); several devices for wakening sound sleepers, the most complex of which emitted cold water from a tube around the sleeper's neck at the appointed hour; eye protectors for chickens, and a very practical improvement in privy-seats, which device ". . . renders it impossible for the user to stand upon the privy-seat; and consists in the provision of rollers on the top of the seat, which, although affording a secure and convenient seat, yet, in the event of any attempt to stand upon them, will revolve, and precipitate the user on to the floor. . . ."

With that item, the Prosecution Rests.

"DADDY SAYS
to pack his bag in a hurry!"

YES, Daddy's bag has to be ready, for he is a busy Bundy sales engineer. Hurry-up trips are commonplace to him—trips which take him all over the industrial United States to help manufacturers with tubing problems.

All through industry, volume producers have learned that any tubing problem is Bundy's problem—a problem which may be laid safely in the lap of the Bundy research and engineering department and left there for solution.

There's a good sound reason for this confidence. Bundy is an organization of specialists—not only in the manufacture of tubing, but in its fabrication. As a result, a large proportion of Bundy's output is sold as finished parts, ready for final assembly—with all forming operations completed and all fittings included.

If tubing in or near Bundy's range of sizes forms a part of your finished product, why not take a leaf from the book of those manufacturers who let Bundy take all product design of tubing parts right off their hands? Address—Bundy Tubing Company, Detroit.

BUNDY TUBING

ENGINEERED TO YOUR EXPECTATIONS

BUNDYWELD double-walled steel tubing, hydrogen-brazed, copper-coated inside and outside. From Capillary sizes up to and including ¼" O.D. This double-walled type also available in steel, tin-coated outside and in Monel.

BUNDY ELECTRIC WELD steel tubing. Single-walled—butt welded—annealed. Furnished tin-coated outside if desired. Sizes up to and including ⅝" O.D.

BUNDY "TRIPLE-PURPOSE" MONEL tubing. Double-walled, rolled from two strips, joints opposite, welded into a solid wall. Available in all Monel, Monel inside—steel outside, and Monel outside—steel inside. Sizes up to and including ⅝" O.D.

SPECIFY Virginia REFRIGERANTS

VIRGINIA SMELTING CO.
Located at tidewater
WEST NORFOLK • VIRGINIA

CUSTOMERS Want it...
DEALERS Wanted!

The market for "packaged" air conditioning is almost unlimited. But no sale is better than the unit *you sell!* It will pay you to investigate the GR-Lipman line. We have a liberal sales franchise . . . and equipment that is unexcelled. Write for details.

GENERAL REFRIGERATION DIVISION
Yates-American Machine Co.
Dept. AC-2 Beloit, Wisconsin

One Instrument UNIVERSAL IN APPLICATION
FOR PRESSURE CONTROL UP TO 1 H.P.A.C.
POLARTRON

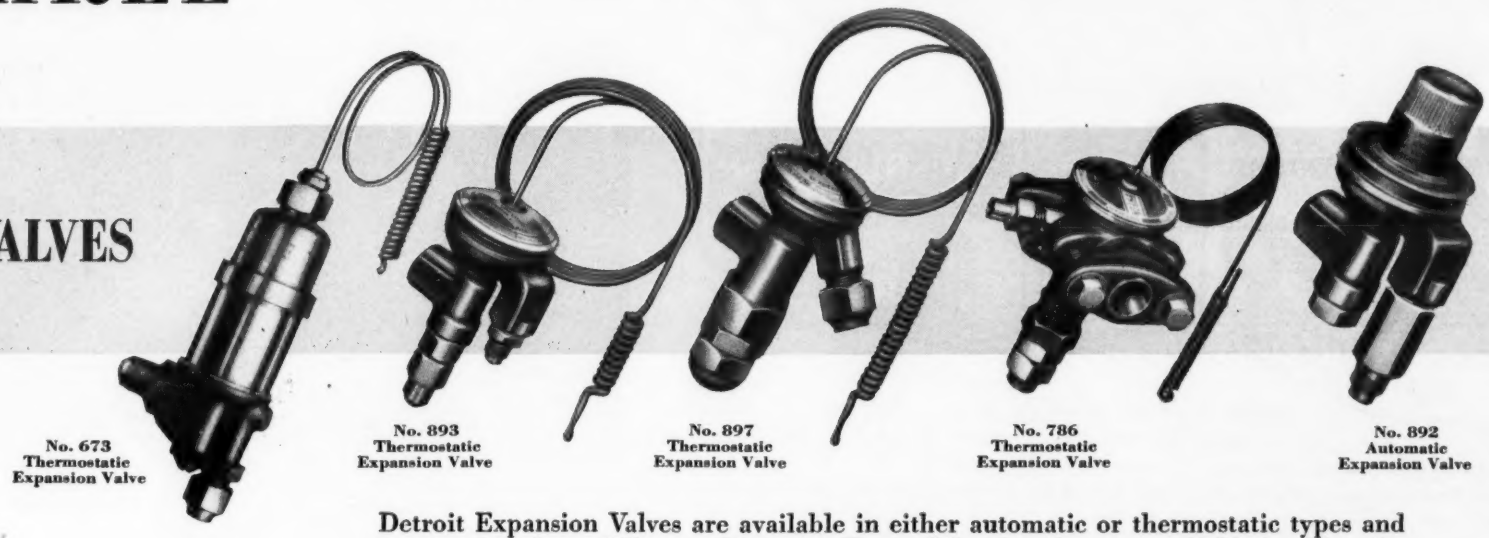
Eight Series 40 Polartron Advantages
* Separate "On and Off" Cycle
* Capillary Pressure Connections
* Cooling Control on Cut Out or Cut In
* Polartron Equipped Compressors can be Converted to Produce Frost-Free Constant Cold
* No Short Cycling
* Universal Range
* Minimum Free Service
* Fewer Models to Stock

MINNEAPOLIS-HONEYWELL
MINNEAPOLIS-HONEYWELL REGULATOR COMPANY
2807 FOURTH AVENUE SOUTH, MINNEAPOLIS, MINNESOTA
REFRIGERATION Control

ONE SOURCE ONE RESPONSIBILITY FOR ALL THREE

When you use expansion valves, solenoid valves and temperature or pressure controls on an air conditioning or refrigeration job, it is important both to you and to your customer that all three units work together in complete harmony. • There is no question on this point when Detroit valves and controls are installed, because Detroit Lubricator Company is the only manufacturer who can exercise complete supervision over engineering, production and final inspection of all of these units. • In using Detroit valves and controls you have a single source with undivided responsibility—no delays in the assembly of the equipment you need for a given job. It is good business to use Detroit valves and controls.

DETROIT EXPANSION VALVES



No. 673 Thermostatic Expansion Valve

No. 893 Thermostatic Expansion Valve

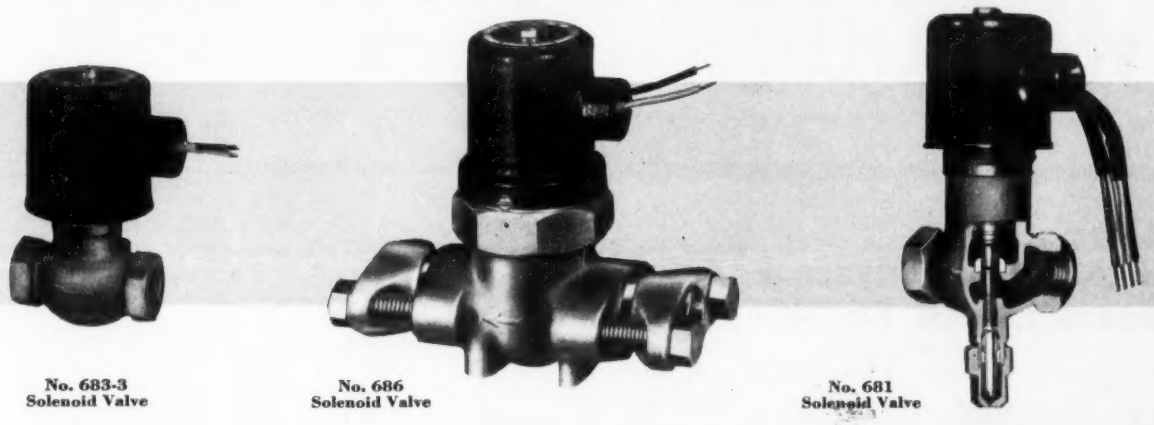
No. 897 Thermostatic Expansion Valve

No. 786 Thermostatic Expansion Valve

No. 892 Automatic Expansion Valve

Detroit Expansion Valves are available in either automatic or thermostatic types and in capacities from .035 ton to 20 tons on Freon. Likewise, they are available in either the Dura-Fram single diaphragm or the Duraflex bellows types. All thermostatic valves are gas charged to protect the motor and provide maximum sensitivity. Needles and seats of all Detroit valves are made of hard, corrosion resistant Delubaloy—all have special cast brass bodies for maximum durability. The capacities of all large valves can be readily changed in the field by a simple change of capacitators or seat assemblies.

DETROIT SILENT SOLENOID VALVES



No. 683-3 Solenoid Valve

No. 686 Solenoid Valve

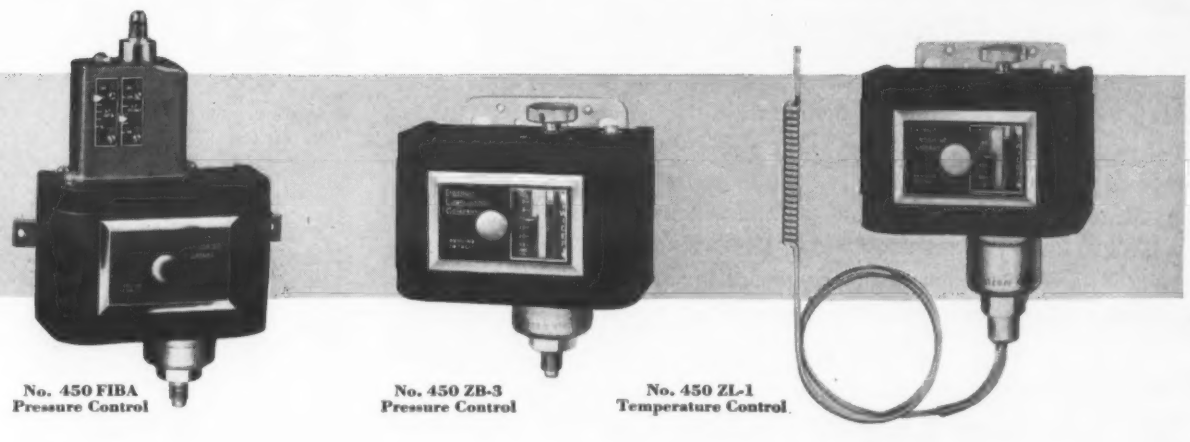
No. 681 Solenoid Valve

Detroit Solenoid Valves cover a complete range of capacities up to 17 tons on Freon at a 2 lb. pressure drop. Electric characteristics assure quiet operation—no A. C. hum. Coils are vacuum impregnated to resist moisture. They will not overheat even in continuous service.

A strong kick-off spring eliminates any tendency to stick in the open position and assures tight closure. Plunger and valve seats are non-magnetic.

Detroit Solenoid Valves can be readily disassembled in the field for inspection or cleaning. Coils can be replaced without breaking the refrigerant line.

DETROIT No. 450 TEMPERATURE AND PRESSURE CONTROLS



No. 450 FIBA Pressure Control

No. 450 ZB-3 Pressure Control

No. 450 ZL-1 Temperature Control

Detroit all metal No. 450 Controls (full line voltage rating) include both temperature and pressure units for all types of commercial refrigeration and air conditioning. They feature such improvements as moisture proof snap switches, high pressure cut-out, high pressure cut-in, simplified internal or external adjustments, covers either solid or with window and strong, sturdy parts that are readily interchangeable in the field.

DETROIT LUBRICATOR COMPANY

General Offices: DETROIT, MICHIGAN

Canadian Representatives — RAILWAY AND ENGINEERING SPECIALTIES LIMITED, Montreal, Toronto, Winnipeg

Export Representatives: Melchoir, Armstrong, Dessau Co., Ridgefield, New Jersey

'Swap' Week Stirs Up Sales For Small-Town Dealer

COWS FOR WASHERS! HORSES FOR REFRIGERATORS!
CHICKENS FOR ELECTRIC IRONS!
EGGS! PIGS! SHEEP! ANYTHING!
Let's SWAP And BARTER!
LET'S TRADE
WHOA!
"If you'll stand still I might be able to swap you for a new electrical appliance."
SWAP ME FOR A WASHER
BECAUSE IT'S TRADE WEEK HERE!
Cows . . . horses . . . eggs . . . chickens . . . LET'S TRADE! Brand new 1941 electric appliances going . . . going . . . what have you to swap? If you haven't got a cow, or a saddle horse, perhaps you have an old model APPLIANCE and have wished for a new one . . YOU HAVE? Well, well . . we'll swap with you and give you a very liberal allowance! THIS IS TRADE WEEK and we are celebrating. Oh, yes . . . we have FREE BALLOONS for the kiddies. Bring them in.
GOT A COW?
This Is The
Westinghouse
WASHER
No cow? But an old washer? We'll swap! And in any case you may buy Westinghouse modern washer convenience and economy NOW at low price and easy terms. Just drop in, and learn about Westinghouse. LET'S TRADE!
TUB
Eggs For Light Bulbs!
Electric Iron and Ironing Board
$4.95 45c Down 50c Week
12" Oscillating FAN, only $6.95
95c Down, $1 Week
Electric CHURNS . . . $15
GOT A SADDLE HORSE?
We Might Get Together On A 1941
Westinghouse
REFRIGERATOR

Above: One of the advertisements used by Anniston Electric Co. to publicize its "swap sale." At right: In one of the first barter deals consummated, this cow was traded for the washer. Left to right are: Bob Pendergrass, Wyatt Mickles, and Frank Kirby of Anniston Electric Co.; Hall Hill of the "Anniston Star"; Sam Jones, once owner of the cow and now owner of the washer; and Guy Dill, vice president of the dealership. The swap sale proved especially popular with farmers in this area.

Everything From Credit Memo To Cow Is Accepted As Payment For Appliances

ANNISTON, Ala.—"Got a saddle horse? We might get together on an electric refrigerator." Swap offers such as this brought truly "electric" success to Anniston Electric Co., Westinghouse dealership, in merchandising appliances of all types to prospects in this rural territory.

Cows for electric washers, chickens for electric irons, eggs for light bulbs, pigs for parlor radios—these were only part of bartering offers made by Frank Kirby, president, and Guy O. Dill, vice president of the dealership, in a series of picture advertisements in the "Anniston Star."

The company was swamped with swaps. At the end of the week, a water heater had been traded for a small car, a dentist's credit memorandum and a gray jumping horse for a refrigerator, a bulldog for a waffle iron, a cow for a washer, and a goat for a radio.

Farmers kidded about the idea, but they brought in their womenfolk, who "talked turkey" for Westinghouse electrical appliances. Anniston Electric Co. had one of its largest turn-overs.

The traded-in merchandise was sold at auction.

* * *

2,500 Refrigerators Sold By Dealers of Canadian Utility

Average Price Is $198

VANCOUVER, B. C., Canada—Because of a temperate climate, this territory is not an area where a refrigerator is an essential requirement in the average household, but under an aggressive dealer cooperative plan sponsored by the British Columbia Electric Railway Co., more than 2,500 refrigerators were sold by dealers alone last year, at an average price of $198.30.

Quota of 1,500 refrigerators set for 1940 was passed in July. During June last year dealers and utility sold 720 refrigerators, including 12 units under 4 feet, 227 four feet, 119 five feet, and 362 units of six foot size and over. One refrigerator was sold under $100, 61 between $100 and $150, 357 at $150 to $200, 241 at $200 to $250, and 60 at $250 or over.

14,000 UNITS IN USE

Some 14,000 refrigerators are now in use in the greater Vancouver area, and the saturation point has jumped from 8% in 1938 to 14.8%.

As part of the 1941 campaign, the refrigerator committee of the Home Appliance Council of the Electrical Service League of British Columbia is planning a special drive to sell 300 units during April. National advertising will be featured in the territory by all manufacturers, who are all represented on the committee, window banners and other material will be supplied to dealers, and newspaper and poster advertising will be used extensively.

The B. C. Electric division at Victoria estimated that saturation has reached 15% in the Vancouver Island territory, and forecasts that 325 more units will be sold by dealers in Victoria and district this year, as well as 140 by the company, in addition to the Vancouver office quota of 3,530, or a grand total of 3,986 units this year.

$1 PER UNIT FOR ADS

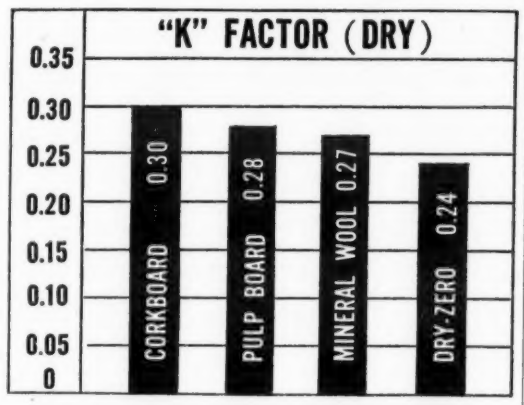
The company pays an advertising allowance of $1 to each dealer on every refrigerator he sells, and will pay approved forms of advertising in full up to the total credit placed to the dealer's account by these allowances. As the allowance on greater load building appliances, such as ranges, are greater, the electrical dealer is thus able to build up a large advertising allowance, and he can use the credits built up on range sales to pay for refrigerator advertising if he wishes.

If dealers are unable to close sales they can list the name of their prospect with the B. C. Electric, and if no other source has turned in the name the dealer is paid a bonus of $5 when the B. C. Electric salesmen complete this sale.

"LOOK FOR ALL THREE" in your Refrigerator Insulation

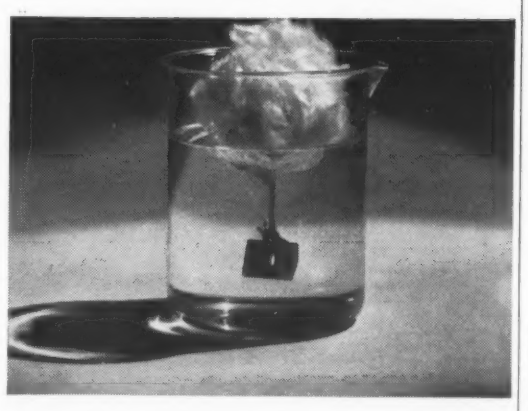
1 High Thermal Efficiency means LOWER REFRIGERATION COSTS

Your refrigerators will cost less to operate if you install Dry-Zero Insulation—established under test as the most efficient commercial insulant known. It has a "*k*" factor of 0.24 (as determined by impartial authorities). Dry-Zero Insulation is made of Java-grown Ceiba fibres whose resistance to heat penetration is extremely high. What's more, the heat-stopping efficiency of these fibres is further increased by a patented scientific process of "graining" which places the fibres *across* the line of heat flow.



2 Moisture Repellence means LONGER USEFUL LIFE

Only an insulation that remains dry for its entire life will effectively retard the entrance of heat into your refrigerator. And that's just what Dry-Zero Insulation can do. It is by nature water repellent (non-hygroscopic) and sheds water like a duck. It will neither absorb moisture nor draw and hold it by capillary attraction. Properly installed, Dry-Zero Insulation retains its heat-stopping efficiency for the life of your refrigerator, and, in addition, it will not "settle," disintegrate, rot, or absorb odors of any kind.



3 Low First Cost and INSTALLATION COST

In its new Bound-Batt form, Dry-Zero Insulation is available at a new low price. Equally important, this new form greatly reduces installation costs. It is stiff enough to handle easily, yet flexible enough to fit irregular contours—an ideal combination for high speed production. Dry-Zero Bound-Batt can be supplied in rolls or in slabs cut to any rectangular size. In roll form, it can be kept in stock and cut on the job as it is used. Both rolls and slabs can be furnished with sealing flange for attaching and sealing edges to the refrigerator framing.

You'll want to know more about Dry-Zero Insulation and how it can help you save money. A new folder, just prepared, is yours for the asking. Merely write, Dry-Zero Corporation, 222 North Bank Drive, Chicago; or, 60 East 42nd Street, New York.

DRY·ZERO INSULATION

Alabama Dealers Battle Quotas For Cash

BIRMINGHAM, Ala. — Quota of 2,000 electric ranges and water heaters is the target of salesmen in the 60-day campaign started March 23 by the Alabama Electrical Appliance Dealers Association with the cooperation of 10 distributors.

Distributors are offering $1,000 in cash prizes. These include statewide prizes of $100, $75, $50, and $35 to salesmen exceeding their quotas by the largest percentages, in addition to zone prizes of $15, $10, and $5.

New and shop-worn ranges and heaters will both count toward prizes, and salesmen will be given 15 days after the contest ends to get the units installed. Salesmen must meet certain minimum standards to qualify.

Cooperating distributors are: Graybar Electric Co. (Hotpoint), Watts-Newsome Co. (Universal, Clark), Alabama Appliance Co. (Gibson, Rex), Matthews Electric Supply Co. (G-E), R. P. McDavid Co. (Cavalier, L & H, Sepco), Birmingham Electric Battery Co. (Norge), Moore-Handley Hardware Co. (Westinghouse), Steel City Supply Co. (Crosley, Pemco), Stewart-Warner Distributor Co. (Stewart-Warner), and Nash-Kelvinator Corp. (Kelvinator).

Housing Tenants Get Tips on Range Uses

RALEIGH, N. C.—So that the tenants of the Raleigh Housing Projects might derive the full benefit from their Hotpoint electric ranges, R. K. Creighton, director of the propects, connived with Johnnie Nee, Hotpoint representative in this territory, and Zach Bacon, divisional sales manager for Carolina Power & Light Co., to stage a three-night cooking school for the tenants of the Halifax Court unit.

Stella Floyd, Hotpoint home economist, conducted the demonstrations in the assembly hall of the Halifax project.

Texas Furniture Store Opens New Appliance Department

CORPUS CHRISTI, Tex. — Announcing the opening of its new appliance department, Allen Furniture Co. here ran an eight-page section in the Caller-Times special issue celebrating dedication of the new $46,000,000 naval air station here.

The Allen firm, which also has a store at Kingsville, Tex., is dealer for Kelvinator refrigerators and ranges.

New Orleans Dealership Opens Two New Stores

NEW ORLEANS—Two new appliance stores were opened here recently by Oak Appliance Co., Norge dealership, at 535 Canal St., in downtown shopping district, and 1301 N. Rampart, in the Vieux Carre residential district.

No managers were appointed, this being a feature of the sales personnel scheme developed by Oliver Radford and John Ackerman, founders. Ten salesmen are employed, each of whom spends half a day each week on the floor of each of the four stores operated by the firm. Thus each salesman has an equal shot at walk-in prospects in each territory served by the firm.

The other two stores are located at 4218 Magazine and 8200 Oak, the latter being headquarters and warehouse. Stores display Norge refrigerators, ranges, washers, and a line of oil-burning space heaters. Since March of last year, the firm has carried its own financing, offering a club plan tailored to varying incomes.

Canal street store, more modern of the two new locations, includes a Philco voice-recording studio which has been responsible for heavy volume of floor traffic.

WHO'S WHO WHERE

Norling To Specialize On G-E Cabinets & Electric Sinks

BRIDGEPORT, Conn. — Earl H. Norling, who has been identified with the electric refrigeration promotional activities of General Electric Co. for the past 14 years, has been appointed headquarters specialist on electric sinks and cabinets for the G-E appliance and merchandise department.

Transfer of Mr. Norling is an indication of the added sales and promotional attention being allotted to the electric sink and to its component appliances, the dishwasher and garbage disposall. In many respects the electric sink, now in its comparative infancy, appears to offer the same opportunities for development as the household refrigerator, requiring similar educational and specialty selling programs.

Mr. Norling's past activities with the refrigeration section cover the preparation of correspondence courses for retail, apartment house, and commercial salesmen, direct mail campaigns, market analysis, and innumerable skits and presentations. He was transferred to the dealer division in 1935, and was closely associated with A. M. Sweeney, G-E household refrigeration manager, in various special activities, including dealer sales plans and road shows for distributors and dealers. When the company established the Retail Development League, a year ago, he helped to establish the first 25 chapters in Arizona, California, Oregon, and Washington.

Midwest Handles Hall In Nebraska, Iowa

OMAHA, Neb.—Midwest Distributors, 1820 Farnam St., has been named distributor for Hall Mfg. Co. air cooling equipment in Nebraska and western Iowa, reports A. J. Kernan, Hall factory representative.

Faller's Furniture Adds Hotpoint Appliances

DONORA, Pa.—Faller's Furniture store, operated by Albert Faller, has jumped into the major appliance business by taking on the Hotpoint line.

Scott & Mason Join Hill Plumbing

SUMTER, S. C.—L. W. Scott and Seth Mason have joined the sales force of Hill Plumbing & Electric Co., Frigidaire dealership operated here by K. B. Hill.

Weber Stove Enters Field With Kelvinator Line

WASHINGTON, Pa.—Weber Stove & Supply Co. has just entered the electrical appliance field here with the Kelvinator franchise and a new store on W. Chestnut St.

Piazza Appliance Named By General Electric

ST. LOUIS—Piazza Appliance Co., 2422 N. 14th, has been named full line General Electric dealer. Carl Piazza is manager.

Joseph Campus Moves His Dealership

MONESSEN, Pa.—Joseph Campus has just moved his Jaycee Electric Co., General Electric dealership here, to a new storeroom adjacent the old location.

St. Charles Firm Builds New Store After Fire

ST. CHARLES, Mo.—St. Charles Electric Co., Frigidaire dealership, has built a new store and showroom following a fire which destroyed its former building.

Miller Named President Of Charleston League

CHARLESTON, W. Va.—Jesse R. Miller was elevated from vice president to the presidency of the Electric League of Charleston, succeeding W. W. Fiala, who resigned prior to moving to Detroit, at a recent meeting at the Ruffner hotel here. H. L. Parks was named vice president to fill Mr. Miller's unexpired term.

New members of the league, who were inducted at the meeting, included Raymond McCracken and Louis Colker.

Joseph Ferrel To Direct Sheboygan Co. Service

SHEBOYGAN, Wis.—Joseph Ferrel has been named service manager of Sheboygan Appliance Co., local distributor of Frigidaire's line of commercial refrigeration equipment.

Western Auto Remodels Two Stores Into One

HOT SPRINGS, Ark.—Two buildings have been remodeled into one for the Western Auto Associate Store, dealer in Kelvinator refrigerators and General Electric traffic appliances.

Nibco Appoints Metal Goods as Distributor

ELKHART, Ind.—Appointment of Metal Goods Corp. as a distributor of Nibco products in the midwestern and southern territory has been announced by George C. Hench, sales manager of Northern Indiana Brass Co.

Metal Goods Corp. has branch warehouses in Houston, Tex., Kansas City, Mo., and St. Louis, and representatives located in Dallas, New Orleans, and Tulsa, Okla.

Denham Joins Staff of Hopkins Equipment

BALTIMORE—Ed. Denham, who recently has been covering the Eastern Shore territory for the Baltimore division of Southern Wholesalers, Inc., Norge and RCA-Victor distributorship, has joined the sales staff of Hopkins Equipment Co., Atlanta distributor of Norge appliances, Zenith radios, and Columbia records.

Don Walters To Direct Sales In 3 La Crosse Districts

LA CROSSE, Wis.—Don Walters has been placed in charge of sales in the midwestern, eastern, and southern territories for La Crosse Novelty Box Mfg. Co., manufacturer of beer dispensing equipment. Mr. Walters was formerly connected with Sherer-Gillett Co. and Northern States Power Co.

Airtemp Production Lines Hit Top Speed To Turn Out Largest Volume In History

Production lines of the Chrysler Airtemp plant at Dayton, Ohio are turning out the largest volume of heating and air conditioning equipment in the history of the division. Above is the assembly line for Model O-70 oil and gas-fired air conditioning furnaces. Here the heating chamber of copper-bearing steel is being enclosed in its steel cabinet.

Wadesboro Auto Adds Ranges, Heater Line

WADESBORO, N. C.—Wadesboro Auto Supply Co., Leonard refrigerator dealership operated here by P. A. Burns, has added the Hotpoint range and water heater lines.

Pico Refrigeration Firm Formed In Los Angeles

LOS ANGELES—John W. Doherty and W. J. Doherty, Jr. are proprietors of the newly organized Pico Refrigeration firm with headquarters at 2962 W. Pico Blvd. here.

SUPER DE LUXE—Fills the gap from 9,500 to 36,000 B T U. Opens an entirely new market in room cooling field. Adequate capacity to handle extra-heavy loads such as small stores, large apartments, directors, waiting rooms. Air and water cooled models.

DE LUXE MODEL—Best appearing and most completely equipped room air conditioner. Built-in thermostatic control. Air and water cooled models.

DE LUXE WINDOW MODEL—In utility, capacity, compactness, portability and attractiveness this newest achievement of Carrier engineering fulfills every requirement for a window type unit.

JUNIOR MODEL—Companion to the De Luxe Model. Has everything — large capacity, good styling, designed for year around use.

Broadest and Finest

LINE OF ROOM COOLERS

4 Completely New Models

Carrier ROOM Weathermakers

Here's What Carrier Offers a Dealer

1 Four new 1941 designs to put you "out in front".
2 First call on new markets with special capacity units.
3 Reliability backed by 9 years' experience in room coolers.
4 Distinctive styling and superior finish.
5 More cooling per unit. Certified ASRE code ratings.
6 Greater profit opportunity because of good margins.
7 Proved record of customer satisfaction—units stay sold.
8 Lower cost of servicing.
9 Promotional campaign supported by national advertising.
10 Liberal cooperative local advertising.
11 All advantages backed by Air Conditioning's First Name.

Sell A Quality Line

The volume sale of room air conditioners has not been done on low price, low capacity units. The market that wants summer comfort is prepared to pay for products of proved quality performance. A room air conditioner will deliver only as much comfort as it is designed and built for. Carrier's long experience is your assurance that you will get the most cooling from the smallest size at least cost and with most economical operation.

CARRIER CORPORATION, Syracuse, N. Y.
"Weather Makers to the World" Desk D12
(In Canada: 30 Bloor St., West, Toronto, Ont.)
I am interested in enjoying margins that will give me a profit. Please send complete details.
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Successful Attic Fan Installations Are Dependent on a Few Simple Rules

Research Report Gives Tips on Best Design Practice For Various Regions

Editor's Note: Starting in the cities of the deep south, the use of attic fans for comfort cooling has spread to northern cities during the past two years. This digest of a booklet by W. H. Badgett of Texas A. & M. gives a number of timely pointers to dealers interested in the attic fan business. Advantages, shortcomings, and precautions to be taken in making installations are outlined in this analysis of a research report.

COLLEGE STATION, Tex.—Aimed at assisting dealers and distributors toward an improved practice in "The Installation and Use of Attic Fans," a bulletin published by the Agricultural and Mechanical College of Texas contains timely information on this subject. Prepared by W. H. Badgett, research associate in the school of engineering, the booklet includes a number of useful suggestions relative to attic fans. A digest follows:

"Cooling with attic fans is based on one of nature's most important methods—that of lower night temperature. While the roof and walls of a building provide shade, they also prevent the free movement of air, which is essential to summer comfort.

HEAT IS TRAPPED

"During the day air trapped in the attic of a house stores up heat, and this heat has no way to escape. Temperatures up to 130° F. are common in this type of enclosed space. At the same time the walls and roof store up heat within themselves.

"At night the house dissipates this heat very slowly and it is usually near morning before the house becomes cool enough for the occupants to sleep. The twin functions of the attic fan are to prevent this storage of heat in the daytime, and to reduce the temperature of the house at night by bringing in quantities of relatively cool outside air.

"For successful operation, the attic fan changes the air many times each hour. Fresh air is drawn in through open windows and doors, thence up stair wells, or through grilles between floors, through grilles in the second floor ceiling, and finally exhausted through an opening in the attic.

"The simplest type of 'attic' fan, is not an attic fan at all, but a large blade fan mounted in front of a window in a small home or apartment. Usually enclosed in an expanded metal housing, for protection, this type of fan draws air through all the open windows and doors and exhausts it out a single window.

"Its only objection is air noise, but it provides an unusual amount of comfort in buildings where installation of an attic fan would be impractical. It may be installed for $35 or less, depending on size.

"Fans mounted in the attic, or the upper portion of a house, range in price from $40 to $150, depending on size and complexity of installation. Operating cost at 3 cents per kwh. will range from approximately $5 per season for a 30-inch fan to $30 for a 54-inch fan.

ONE MINUTE AIR CHANGE

"To obtain satisfactory results with an attic fan installation, experience indicates that the fan should change all the air in the house, exclusive of closets and pantries, at least every minute. For example, if the house has a cubical content of 10,000 cubic feet, the fan capacity should be 10,000 c.f.m.

"In small homes, apartments, tourist camps, and other small buildings, or where all the house is ventilated at one time, it may be advisable to use a fan which will provide one and one-half to two air changes per minute. In two-story homes, a fan having capacity to change the air every minute and a half may be adequate.

"In many instances it may be necessary to use two small fans, rather than one large one, because of structural difficulties encountered in attic fan work. This makes a more flexible installation with no sacrifice in efficiency.

"The location of the fan will depend first upon the location of the ceiling grille. If the grille can be located in the ceiling of a hall in the center of the house, this affords excellent distribution.

"The fan should never be more than 3 feet from the nearest side of the ceiling grille. If it is located too close to the opening, air and fan noises will be objectionable.

"One method of determining the fan location is to place it not less than one fan diameter from the nearest side of the grille. Thus, a fan having a 42-inch blade should be placed at least 42 inches from the ceiling grille.

FAN LOCATION

"If it can be avoided, never locate the fan facing toward an attic window or louver opening. This prevents light from flickering through the vent box into the room below. The fan should not be located so it blows against objects such as walls, roof, or chimneys. It should be located in a manner which permits the air to be circulated as much as possible before it escapes through the exhaust openings.

"In building a suction box, which connects the grille and fan, a cross-section of this box should be as large as the intake grille opening or the discharge opening, and it should never be less than the area of the fan itself. Framing members should be placed on the outside, so as not to obstruct the movement of air.

"A sound absorbing material, such as rigid insulating board, is recommended for the walls of the suction box. The ceiling grille should be protected by a trap door, which may be used as a fire door by connection with a fusible link.

"In the case of flat roofed houses, a penthouse may be constructed of wood or metal to house the attic fan, which in this case exhausts to the outdoors through a louvered opening. Another method is to install the fan in a vertical position (upward discharge) and allow the air to escape through a series of roof ventilators.

CEILING GRILLES

"In the case of "northern type" attic fan installations, the entire attic is employed as a suction box, the fan being installed in an attic window, or louvered opening. This type of installation can be made only in tight attics, which have been sealed, and is not recommended in the south, where attics are loosely constructed."

(H. J. Somers of Detroit, who has made many attic fan installations throughout Michigan for several years states that this "northern" type of installation is entirely satisfactory and sees no reason for using a suction box. Mr. Badgett, of Texas, says that even with tight attic construction, the suction box type is more satisfactory.)

"In the installation of ceiling grilles two things are of utmost importance. One of these is that a grille should be installed in the most central location possible, and the other is that the grille must have a free area equivalent to the area of the fan.

"For quiet operation in residences, grille velocity should not exceed 750 f.p.m. To determine the net, or free area required, divide the capacity of the fan, in c.f.m., by 750—thus dividing the volume by the velocity and obtaining the net area, in square feet.

"If space permits, even lower velocities are desirable.

"Common types of grilles used in attic fan work are the wooden, or egg crate type, and expanded metal. Ordinary wooden grilles have a free area of 80%; ¾-inch expanded metal, 63%. The unit net free area should never be less than 60%.

"Automatic shutters may be installed in the ceiling opening, to prevent flies and mosquitoes from entering the residence when the fan is not in operation. These shutters should be cleaned and oiled once a season.

EXHAUST OPENINGS SCREENED

"Exhaust openings out of the attic may be constructed from existing windows, louvered opening at gable ends or in dormers, roof ventilators, penthouses, openings under eaves, or exhaust grilles in the ceiling of a porch. These openings should have a net area slightly greater than the grille openings from the building.

"Exhaust openings may be screened to prevent the entrance of flies, but a 'box' construction should be used, to increase the free area.

"For quiet operation attic fans should be mounted on rubber, vibration dampeners (springs), or felt cushions. The fan motor should also be mounted so that vibration and sound transmission are eliminated.

"The fan should be located over a partition wall, or as near to one as possible. Sometimes additional bracing of ceiling joists is required.

"The fan housing should be isolated from the suction box by means of a strip of canvass 8 to 10 inches wide.

"Attic fans should be wired by a licensed electrician, and wiring should comply with all local and state fire ordinances. The switch should be located conveniently; some owners prefer to have it near their bed.

"Turned on just before the sun goes down, the attic fan should be operated until the house cools off. With a two-speed motor it is often advisable to permit the fan to run all night—at reduced speed. If properly sized, the fan will generate gentle breezes through the house.

"On hot days, the house may be closed up and blinds drawn until about 11 o'clock in the morning; then one or two windows opened on the shady side of the building. It is not advisable to draw in outdoor air that is hotter than the indoor air.

18 POINTS TO CHECK

"The following are installation and operation suggestions given in the Texas reports:

"1. Be sure to oil fan bearings and motor with light oil. (Use vasoline on ball bearings.)

"2. See that fan rotates freely before starting. Check with wattmeter to see that fan is not overloaded.

"3. Be sure line voltage is correct.

"4. Examine motor starting mechanism. It sometimes sticks.

"5. Check tightness and alignment of belt. It should not feel "dead." A loose belt will squeal when starting, but V-belts should not be taut.

"6. See that all electrical connections are tight.

"7. Tighten motor bolts and set screw in fan hub.

"8. If motor gets hot and fan slows down, check size of wire to motor and voltage of motor.

"9. Never start fan unless window or door is open.

"10. Be sure no rigid connection is made to fan housing.

"11. Use motor with automatic thermal overload protection.

"12. Clearance on exhaust side of fan should be at least 5 feet.

"13. Employ fans with certified capacity, and see that grille and louver openings are adequate.

"14. Provide door over ceiling grille and exhaust openings that can be closed in winter.

"15. Use vibration dampeners and canvass connection to prevent noise.

"16. Locate fan over partition wall, if possible. .

"17. Do not expect too much. Attic ventilation is not COMPLETE AIR CONDITIONING, and you can't get 'something for nothing.'

"18. Check each fan at the beginning of each season."

ON THE JOB REPLACEMENTS

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Compact—Durable—Easy to Handle

Get the Dayton V-Belt Service Kit for "on the job" V-Belt replacement service and save call-backs, delays and customer squawks. Easy to handle, this compact, durable Swedish Fibre case contains an assortment of 43 fractional horsepower V-Belts at your finger tips plus a handy V-Belt Matchometer. Here's the portable, profitable answer to "on the job" V-Belt replacements for all leading makes of automatic refrigerators including Frigidaire, General Electric, Kelvinator, Norge, Westinghouse and others. Costs only $23.48 and pays for itself out of gas and oil savings.

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WORLD'S LARGEST MAKERS OF V-BELTS

This is fundamental:

If 93% of all jobbing outlets in these three states carry Jarrow Gaskets the trade *must* prefer them. And no wonder! Jarrow Gaskets service nearly 95% of all refrigerators and coolers, they're accurate, low priced and are made by a company specializing in gaskets and sponge rubber insulation.

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MANUFACTURERS: Let us help you with your gasket problems

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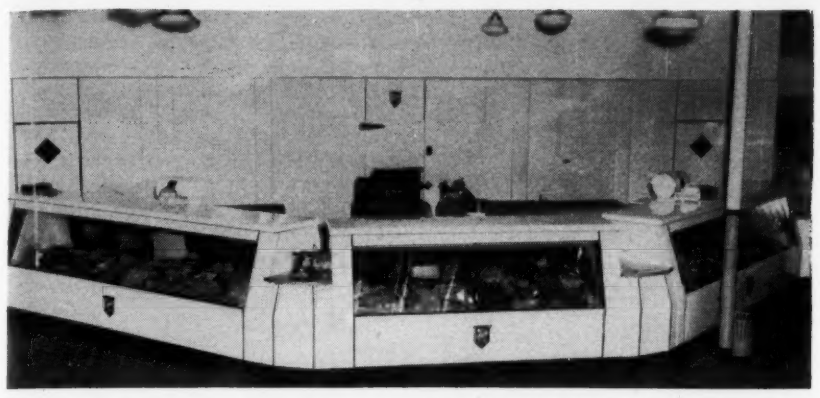

"Best salesmen we have are our refrigerated displays," declares the manager of the cooperative store operated by American Cast Iron Pipe Co. in Birmingham, Ala. Dressy store design and unusual use of the fixtures distinguish the installation. Shown here are the Warren meat display cases in semi-circular arrangement.

Fresh fruit and vegetable refrigerated open-type display case is kept behind the counter where an enticing display of the produce is within easy view of the customers.

The big self-service dairy display case also provides space on the top shelf for the display of evaporated fruits (packaged raisins, apples, prunes, pears, and peaches).

* * *

Birmingham Market Has 'Reasons' For Unusual Placement of Store Fixtures

BIRMINGHAM, Ala. — After a year's experience with modern refrigerated food display equipment, H. L. Smith, manager of the cooperative store operated by American Cast Iron Pipe Co., believes that "The best salesmen we have are our refrigerated displays."

When officials of the concern concluded that refrigeration could be used to sell as well as preserve food, they studied various lines and visited factories and other food stores before buying. They decided upon deluxe, all-porcelain equipment, which was installed by Maske & Kent Refrigeration Co. here.

Equipment consists of: two Warren 12-foot double duty meat cases, a 10-foot Warren poultry and fish case, a Warren 20 x 10-foot walk-in cooler with two compartments, one for vegetables and one for dairy products storage, two Hill 8-foot vegetable cases, and a 12-foot Warren dairy products display case.

The cases are powered by Copeland compressors, ranging from ¾ to 2 hp. Six compressors are located in a lean-to outside of the store, while the unit for the dairy products display case is adjacent to the case, having a porcelain cover which is used for counter display.

Self-service dairy case which also displays evaporated fruits (packaged raisins, apples, prunes, pears, and peaches) has been a tremendous producer of sales, according to Manager Smith, sales of fruit increasing ten-fold.

Milk is kept in the lower section of the case, and the upper shelves have other dairy products and dried fruits. A section of the case is given over to packaged eggs, three grades of which are handled. But the majority of customers, reports Mr. Smith, prefers the premium grade, 90% of egg sales in summer being from the dozen cartons which are kept displayed on an upper shelf in this case.

The federal law which requires oleomargarine to be kept in the factory packing case until sold, interferes, Mr. Smith believes, with its display in individual cartons and consequent increased sales possibilities.

Unusual arrangement of meat, poultry, and fish display cases has them placed in a semi-circle around the walk-in cooler. This gives the meat cutters more room, puts them all closer to the cooler, gives more standing room for customers, and makes the customers at either end of the counter seem closer to the center of operations.

Walk-in cooler has a rear service door facing the receiving room which permits replenishing without the packers bringing meat through the front doors, thus avoiding interference with the trade.

The refrigerated vegetable and fruit display has been a definite factor in increasing sales at a better markup, reducing loss from spoilage, and providing customer satisfaction. The store does not encourage self-service in this line, preferring to keep handling at a minimum.

Tricks of the Refrigeration Trade Reduce Meat Shrinkage To Save Packer $3,000

TOPPENISH, Wash.—Savings of $3,000 a year resulted when McDonald & Sons, meat packing firm here, forced by expanding business to add to its plant, decided to modernize its old plant too.

Designed specifically to reduce meat shrinkage losses, a new 10-hp. plant, with 4.5 times the cubic foot capacity of the old type 7½-hp. ammonia machine, was installed. Properly conditioned air now saves 1% of the monthly volume of 225,000 pounds of dressed meat, or about $270 formerly lost in evaporation.

Relative humidity of 80 to 87% is maintained in the drip and holding rooms. Refrigeration is supplied separately for each room by two Frigidaire 5-hp. water-cooled "Freon-12" compressors. Each unit has its own heat interchanger and accumulator.

Temperature difference between coils and air does not exceed 8° on the average, helping to reduce moisture loss. Blower compartments of 9,500 c.f.m. capacity recirculate air above the rafters so that meat does not get a direct blast of air against it. Ceiling slopes from 15 to 13½ feet, forcing air downwards gently. A duct 2 feet from the floor picks up the return air.

Replacing the old 19 x 20 x 17-foot drip and holding room, the new room measures 13 x 48 x 15 feet. A 1½-hp. centrifugal fan completely recirculates air every two minutes, cooling freshly killed meat to 40° F. Identical blower equipment in the 26 x 48 x 15-foot holding room maintains 34° F.

Combination low pressure and thermostatic control regulates temperature in each room. Two thermostatic expansion valves, with the thermostat operating a liquid line solenoid valve, permit wide selection of desired temperature by the operator.

Refrigeration equipment was installed by Yakima Hardware Co. of Yakima, Wash. under supervision of Jack Saunders.

Old Brewery To House Locker Storage Plant

HARRISBURG, Pa. — Three hundred frozen food storage lockers will be included in the cold storage plant and feed terminal to be operated in the old Steelton Brewery ice plant here by Harrisburg Feed Terminal Corp., a recently chartered firm incorporated with $50,000 capital by R. Shoemaker, F. W. Balsbaugh, and F. D. Cramer.

The new business will operate on a 24-hours-a-day basis, with an attendant on hand at all times.

The present building will be remodeled and equipped with a railroad siding, according to Mr. Shoemaker.

Wilkinson Two-Time Service Contest Winner

MONTGOMERY, Ala.—For the second consecutive year H. J. Wilkinson, appliance repair man for the southeast division of Alabama Power Co., walked off with first prize in the refrigeration quiz section of the Refrigeration Service Engineering School sponsored by Teague Hardware Co. and conducted by field engineers of the various refrigeration manufacturers. The prize consisted of a kit of V-belts for refrigerators.

Merkle Describes New Ranco Control To Texans

DALLAS, Tex.—Refrigeration controls, particularly Ranco's Type 91G2 control, were discussed in an illustrated lecture by J. D. Merkle, assistant sales manager of Ranco, Inc. at a meeting of refrigeration men sponsored by Electromotive Corp. here. Movies of Ranco's plant followed the discussion.

Appliances Climb Out Of Levin Basement

JEANNETTE, Pa.—Encouraged by a 100% increase in appliance sales, Levin Furniture Co. has moved its appliance department out of the basement and located it on the first floor, where it now occupies about 25% of the main floor space.

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BUILD MODERN
PROTECT IRON AND STEEL FROM RUST
BY BONDERIZ
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add a lifetime of
RUST PROTECTION
BONDERIZED FOR Plus VALUE
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For more than a decade—ever since Bonderizing was perfected—millions of buyers of Refrigerators and Washing Machines, as well as scores of other products, have learned the good points of Bonderizing through consistent advertising in the Nation's greatest magazines.
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Back Door Infiltration

EDITORIALS in recent issues of the NEWS which have discussed the materials supply emergency—with especial reference to ways and means jobbers, distributors, and dealers can cooperate to expedite deliveries—seem to have struck several responsive chords.

Numerous requests to reprint and photostat these editorials have resulted in a distribution so diverse that we are now receiving comment and communications from fields which are remote indeed from refrigeration and air conditioning. Judging by some of these messages, the refrigeration industry is pretty well off—comparatively speaking.

Being well off comparatively, however, far from satisfies a good many people today. Both manufacturers and jobbers currently are not only being beseiged with orders from regular customers, but are having new business drop in over the transom from totally unexpected sources.

REGULAR CUSTOMERS MAY BE SHOVED ASIDE

Since few things in life are more exciting or more pleasing than a new customer, there has been some tendency to expedite these unexpected orders to the disadvantage of old friends.

This circumstance leads one Old Head in the industry to divest himself of the following sage maxim:

"In times of emergency it is wise to preserve stocks for customers who were customers prior to this crisis, and who are expected to remain customers after the crisis has terminated."

Because there is a limit to the amount of material which any manufacturer can obtain, it has become necessary for many manufacturers to turn down business from firms which have never been customers of theirs before.

In many cases, these manufacturers have found, after having turned down new business so that they may preserve stocks for regular customers, the order is placed with a jobber. In other words, instead of this business coming in through the front door, it "infiltrates" through the back door.

This reminds Detroiters of the used car lots in that city which advertise: "No Sales to Dealers" in order to support their tenuous claim of "wholesale prices."

ORDERS NOW GO THROUGH JOBBER

In the case of refrigeration parts and supplies, however, this is no gag. Scarcity of parts and materials is so acute today that some original equipment fabricators are willing to pay the premium of ordering through a jobber.

This has the effect of reducing the supply of such parts for the replacement business, for service men and dealers who look to the jobber as their normal source of supply. The original equipment manufacturer will be short-circuiting the jobber, of course, as soon as a more normal market obtains.

So again we get back to the theme which has been running through so many editorials in the NEWS during the last several weeks: *preserve your business friendships;* don't lose your head during this war hysteria; in time of war prepare for peace.

PRESERVE YOUR BUSINESS FRIENDSHIPS

The mental readjustment necessary in changing one's business methods from a sellers' market to a buyers' market is a tremendous one—particularly in an industry so highly competitive as the refrigeration and air conditioning industry. But eventually the principle of *taking care of your friends* will become apparent to all, and the confusion so rife today will resolve itself into orderly programs of sound business management.

BOOK REVIEWS

"How to Teach a Job," published by National Foremen's Institute, Deep River, Conn. Author: R. D. Bundy. Price: $1.00. Pages: 63. Review by: C. Dale Mericle.

SHORTAGE of labor, skilled labor, has become a problem of major importance in United States' national defense effort. And as was pointed out in a recent NEWS editorial, this shortage may even become more acute in the near future. The government and manufacturers are worried about this, for when the rearmament program reaches full speed in a few months, they fear that there won't be enough skilled men to go around.

To claim that this book has all the answers to this problem would be foolhardy —and no one does. But it does contain an idea, an idea substantiated by facts and experiments that ultimately might be the answer to teaching workmen how to acquire some skills in a relatively short time.

Besides providing one key to the national defense problem, the author's theme might also be applied to improve general plant efficiency and labor conditions. Perhaps if all plant management would consider and adopt the plan of training suggested by Mr. Bundy, workmen might be better satisfied and less likely to be incited to tie up production with strikes.

Foremen, according to the author, should be taught how to teach. New employes in a factory are usually shown how to perform a certain process by the foreman. If the foreman does not know how to instruct the new worker, the chances are that the untrained worker will require much time to learn the job, frequently wasting material through mistakes, slowing up production, making the foreman irate and himself rather dissatisfied with the whole business.

Learning how to teach a job is not easy. It requires a complete and careful analysis of the particular job. All the steps of the job must be broken down into single operations and placed in their proper order. Then these many operations (and even the more simple jobs are discovered to have many operations when analyzed) must be described in complete detail.

Of major importance, too, is the impression a foreman makes in his first contact with the new employe. The new man should be told such details as where to hang his coat, what time he is to eat and where, and when he will be paid. The fellow, contends the author, is probably thinking about these things and consequently may not pay close attention to the foreman's instructions. Then the foreman should attempt to learn something of the worker's past experiences which may be applied to the particular problem at hand.

The idea that "minor" plant officials, such as foremen, play an all-important role in employe relations is not an absolutely new one. This book, however, re-emphasizes it and adds the new thought of making foremen expert teachers to help them in their primary job—production.

They'll Do It Every Time . . . . . By Jimmie Hatlo

GENTLEMEN IT HAS BEEN MOVED AND SECONDED THAT BREEZY BLUFFINGTON BE NOMINATED FOR SECRETARY OF THIS CLUB.
FELLOW MEMBERS, I AM FLATTERED, BUT PRESS OF PRIVATE BUSINESS PREVENTS ME FROM ACCEPTING THE HONOR. I SIMPLY DO NOT HAVE THE TIME. THEREFORE, I SUGGEST YOU NOMINATE HERMAN TREMBLECHIN FOR SECRETARY.
SO - THEY ELECTED TREMBLECHIN AND HE'S HAD BLUFFINGTON ON HIS TAIL EVERY DAY SINCE —
THE URGE TO KILL
AND ANOTHER THING, YOU OUGHT TO SEND OUT A SNAPPY BULLETIN, TRYING TO GET THE BOYS TO PATRONIZE THE DINING-ROOM MORE. AND YOU GOTTA LOWER THE BOOM ON THESE MEMBERS WHO ARE DELINQUENT IN THEIR DUES - ETC., ETC., ETC.
THANX TO JOHN GAMBLE, PHILADELPHIA, PA.
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3-7

"Facing the Tax Problem," Prepared Under the Auspices of the Committee on Taxation of the Twentieth Century Fund, Inc. 606 Pages. Published by the Twentieth Century Fund, New York City. Review by Robert P. Nixon.

MOST of us will want to know something about this book. It may save us some dollars, and it will doubtless save us many headaches. It is an understandable survey of taxes.

If there is anyone who can profess no connection with or interest in taxes, he is either dead or dead-broke, and in either case will have no use for the book. As for the tax specialist, he probably knows all about this study already. So omitting the tax-free and the tax specialist, we will deal with just the rest of us, and how we can make use of a three-year-old book on taxes.

This book was far-sighted enough to consider a possible need for much larger tax revenues, and it is now old enough to have missed any crisis-hysteria in its appraisal of our tax system. Its authors would likely believe that the burden of current and planned defense expenditures can be successfully borne by our economic system.

Don't read this book cover-to-cover. Most of it is statistics and data, and detailed description, and it's very dry stuff indeed. Begin instead on page 393, at the beginning of the "Conclusions." These are in paragraphic form, are short and to the point, and make interesting and informative reading; some of these you will cheer, some will surprise you, and some will probably make you mad as a wet hen. Page number references are provided so you can then go back and read the basis of each conclusion whenever you may be interested. Here are some of the book's ideas:

As a nation, we could probably pay a good deal more taxes. The income tax is too heavily weighted against risky types of investment. There shouldn't be any income taxes on corporations anyway. Excess-profits taxes should be high, however, and stockholders should be taxed on corporate profits, whether or not they receive dividends.

Taxation should not be barred as an instrument of social control. Many taxes, however, have a different effect from that intended. Protective tariffs are mostly bad, but changes here should be made slowly. Taxes on oleomargarine and chain stores are bad. Capital gains ought to be taxed more, but it's hard to say how. Maybe taxes on cigarettes should be reduced, but on "spirits" they've got to stay. Some kinds of "justice" in taxation are foolish while others are very important. Farmers get off light, taxwise. The tax burden on families with $500 to $1,000 incomes, is heavier than that on $2,000 incomes, on a percentage base, and this is bad.

The tax burden on a corporation official with an actual income of a million a year might well be more than the million a year, if he took no steps to distribute the income or property among members of the family.

It's all wrong to lower property taxes soon after land has been changing hands a lot. There's no sense to the single tax on land. "Tax-exempt" securities should not be tax exempt.

The personal income tax exemptions should be reduced to $1,000 for couples, $500 for single persons if it can be administered properly. Gift taxes should be increased. Sales taxes should be repealed, when states can possibly get along without them. We ought not to pay more than 2 cents for first-class mail.

This is some of what the book says, though its authors would almost doubtless complain of the wording, particularly lack of qualification, in the above samples.

Further, the book ably points out that the present system is reasonably serviceable, and it explains in a rather clear-cut, understandable fashion the kind of taxes we have and the reasons for the kind that we have. Typical of the increasing number of usable studies coming from semi-public "funds" and institutes these days, it also presents the figures and facts behind its reasoning.

The committee which supervised its preparation is interesting for its diversification of business and professional activities. It lends authority to the study, and speaks well for its unbiased conclusions, that such a group directed it. The committee was composed of: Thomas I. Parkinson, Chairman, President, The Equitable Life Assurance Society; Francis Biddle, formerly Chairman, National Labor Relations Board; Henry S. Dennison, President, The Dennison Mfg. Co.; Robert Murray Haig, McVickar Professor of Political Economy, Columbia University; Roswell Magill, Professor of Law, Columbia University; Peter Molyneaux, Editor, The Texas Weekly; Eustice Seligman, of the Firm of Sullivan & Cromwell.

Because it has the rare combination of technical accuracy, unbiased and authoritative opinion, and genuine readability, "Facing The Tax Problem," can be useful to business and professional men throughout the country, especially at a time when taxes are of such great concern to all of us.

LETTERS

ANXIOUS TO RECEIVE SPANISH DIRECTORY

Compania Electric De Cuba
Apartado 2284
Habana, Cuba

Editor:

As announced in the front page of the March 12 issue of your Newspaper, please send us a copy of the Spanish edition of the 1941 Refrigeration & Air Conditioning Directory.

Having received and read your most valuable, interesting, and helpful Newspaper for the last 10 years, and Mr. Betancourt, our Chief Engineer, being one of the translators, we are very anxious to receive your book.

C. BOLIVAR

—GRAND

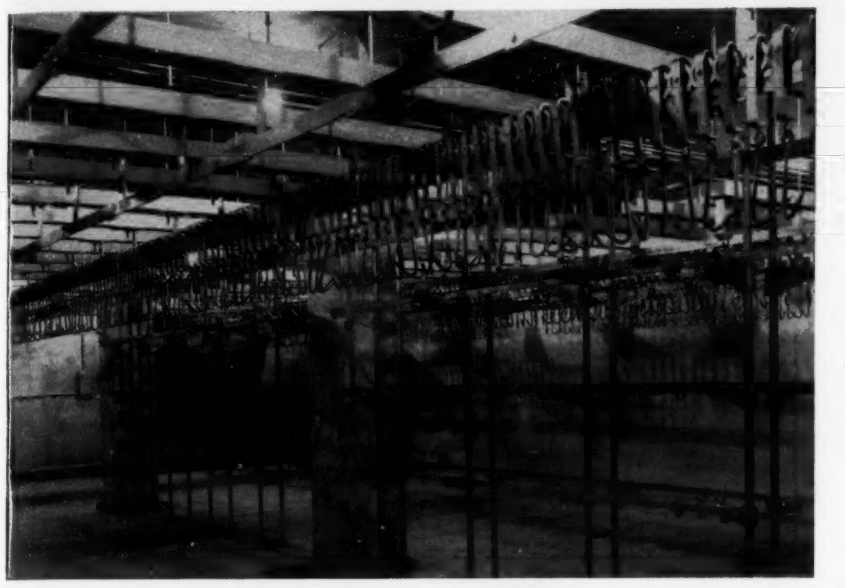
174 Lorish Ave., Wilmington, Ohio

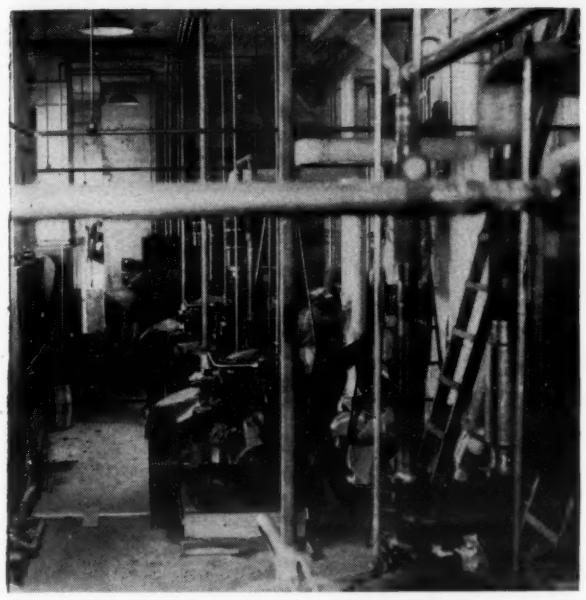
Sirs:

Sure do have a grand paper. Include the Directory as of Nov. 27 issue, page 37.

FAY A. FARLEY

420-Ton Cold Storage Plant Serves Army Men At Camp Shelby, Miss.





Above: Interior of meat storage room, showing hangers and racks.

At left: Here is the refrigeration equipment for one of the plant's three units.

* * *

Multi-Speed Freon Units Have Automatic Controls

CAMP SHELBY, Miss.—Refrigeration capacity totaling 420 tons, sufficient to preserve subsistence stores for 42,000 soldiers, is provided in the three standard cold storage units built under one roof as one of the permanent structures for this $20,000,000 army camp.

The building is 88 by 270 feet, including the loading and unloading platforms, making a total floor area of 23,760 square feet, nearly half an acre. The structure is built of reinforced concrete, insulated with 2 inches of cork. Walls and ceilings are finished with two coats of odorless mastic. Overhead track rails are provided for easy movement of meats and food cartons.

Multi-speed "Freon-12" units supply the refrigeration, which is automatically controlled. An evaporative condenser is included. Each of the three cold storage units has five rooms, permitting a variety of temperature conditions.

Frick System Removes Heat Generated By Chemicals In Processing Plant

BESSEMER, Ala.—Refrigeration is used to control heat generated in a chemical process at the Blue Cross Chemical Co. here. The company produces a bleaching compound used in laundries which contains caustic soda and chlorine.

Heat produced when these chemicals are mixed in a tank is removed by a 5-hp. Frick ammonia compressor, installed by Smith & Smith Refrigeration Co., of Birmingham, Ala.

Restaurant Cooling Proves Big Market

Birmingham Refrigeration Dealers Flourish On 'Eatery' Business

BIRMINGHAM, Ala. — Drive-in restaurants, deluxe tourist camps, new barbecues and quick lunch places, and expanding city restaurants are proving excellent markets for electric refrigeration in this territory, with the result that the number of refrigeration dealers in this city has doubled in the past four years.

Constructing a 6 x 16-foot precooler for beer and soft drinks is "the smartest thing we did in building our new place," believes W. E. Thomas, proprietor of the Thomas Drive-In restaurant recently opened.

Hot drinks, coming off the delivery trucks, are placed in the precooler first. They are kept there until needed to replenish the bottle coolers out front. The restaurant can sell drinks by the case for parties and picnics from the precooler which is maintained at the same temperature as bottle coolers.

The built-in precooler, insulated with 2 inches of cork and equipped with a Peerless blower coil and a York door, was installed by Ed. Friedrich Sales Corp here, managed by H. L. Gibbons. This firm also installed two 9-foot bottle coolers, an 8 x 6-foot walk-in cooler, a 4-door grocery box, and two Temprite water coolers.

Another new drive-in, the Candleight restaurant in Montgomery, Ala., is air conditioned, and has a buffet lunch.

refrigeration equipment installed by Nolin Bros. Refrigeration Co. of that city.

Refrigeration dealers are also interested in the new deluxe tourist camps, called "motels" (a combination of "motor" and "hotel"). Two new camps—Alama Plaza Hotel Courts of Jackson, Miss. and Green Motor Inn of Montgomery, Ala.—have electric refrigerators in each room or apartment, in addition to circulating ice water.

Bartenders Treated Again At James & Co. Party

ST. LOUIS — Another bartender and tavern owner party was held April 14 by James & Co., G-E distributor, to demonstrate dry bottle cases, draught beer equipment, commercial refrigeration for storage, cases, and cooling rooms, and its complete line of tavern equipment. Held at the firm's showrooms, 4514 Lindell Blvd., the party included musical entertainment, dancing, and

Roasters Pushed In Philadelphia

PHILADELPHIA — Three-month campaign on electric ranges, roasters, and water heaters with extensive newspaper, radio, billboard, and street car advertising, many cooking schools, and other dealer helps is underway here, sponsored by the Electrical Association of Philadelphia.

The drive, which began March 10, will run until May 22. During the week of April 21 an Electric Kitchen Show will be held in the Edison building, featuring seven complete electric kitchens and complete displays of latest model ranges, refrigerators, and water heaters. Newspaper advertising on the show will contain limerick contests.

On May 6, 7, and 8, Miss Jessie deBoth will conduct the "Philadelphia Inquirer" cooking school in Convention Hall, while schools sponsored by the "Philadelphia Record" are to be held in 21 neighborhood theaters from March 11 to May 22.

Telegram-like advertisements will be inserted in all local dailies by the association during the campaign. Dealers who cooperate in the special range window display plan will be given two advertisements in neighborhood papers of their selection.

Many radio spot announcements are included in publicity plans of the campaign. About 60 24-sheet posters will also be used. Philadelphia Electric Co. is supporting the drive with newspaper advertising, billboards, bill enclosures, and mail.

In connection with the neighborhood theater cooking schools, dealers are offered special advertising rates, low-cost spatula premiums, and can compete in a $150 contest for window displays of electric ranges or roasters. Department and large furniture stores can win prizes of $25, $15, or $10, while all other cooperating dealers are offered one first of $25, a second of $15, a third, fourth, and fifth of $10 each, and six prizes of $5 each.

There Is No Substitute For Experience

YOU CAN'T MAKE MONEY BY SWAPPING DOLLARS!

Are you just a clearing-house for customer dollars?

Does "competition" throttle your profits?

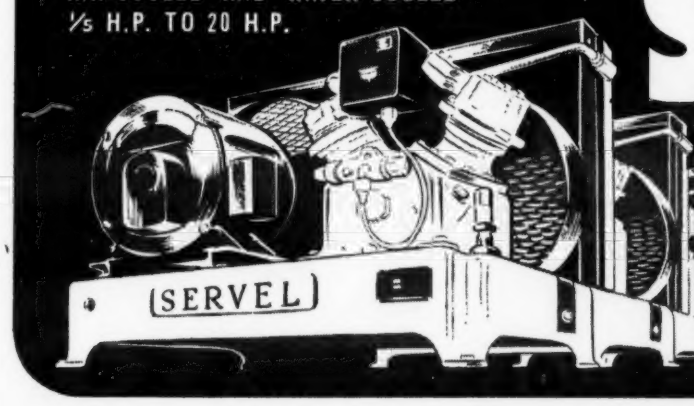
If you find that "making ends meet" doesn't leave you a fair profit, your trouble may lie in your inability to CONTROL your PROFIT MARGIN.

Successful distributors of Servel Commercial Refrigeration and fixture manufacturers using Servel Machine Units have proved that Servel's equitable SALES POLICY protects against cut-throat competitive situations in which a competitor sets YOUR PRICE.

Servel substitutes CO-OPERATION for COMPETITION through controlled distribution.

For full details—write today to Servel, Inc., Electric Refrigeration and Air Conditioning Division, Evansville, Indiana.

OVER 80 STANDARD MODELS—
AIR-COOLED AND WATER-COOLED
1/5 H.P. TO 20 H.P.



SERVEL
COMMERCIAL REFRIGERATION
and
AIR CONDITIONING

The Preferred METHYL CHLORIDE for Service Work

DU PONT
REG. U.S. PAT. OFF.
Artic
REG. U.S. PAT. OFF.

For information about nearest source of supply, write to:
THE R. & H. CHEMICALS DEPARTMENT
E. I. DU PONT DE NEMOURS & COMPANY (INC.)
Wilmington, Delaware
or National Ammonia Division
Frankford P. O. Philadelphia, Pa.

Frigidaire Honors the 25 Men Who Have Been Around 25 Years

Frigidaire's General Sales Manager P. M. Bratten is decorated with a white gardenia which identified 25-year men. Happy gentleman at the left is R. H. Grant, vice president of General Motors Corp.

The 25-year Delco Light-Frigidaire veterans who were guests at the testimonial dinner are, left to right, seated: C. A. Copp, vice president; G. H. Yehle, advertising display department; P. M. Bratten, general sales manager, appliance division; E. G. Biechler, general manager; R. H. Grant, vice president, General Motors Corp.; L. C. Shannon, manager, foreign department; and R. V. Polen, assistant manager of plants. Standing: A. Brentlinger, production control department; H. C. Bahl, supervisor of cafeterias; J. S. Kemper, machine repair department; H. P. Braeutigan, engineering drafting department; C. O. Euchenhofer, tool division; R. P. Carr, manager, order department; W. E. Bailey, service organization department; J. E. Houser, supervisor, service manufacturing; George Nauman, business management department; W. I. Gottschall, comptroller division; E. J. Barney, purchasing agent; F. O. Pansing, assistant treasurer; G. M. Troup, standards division; G. Puls, credit manager; R. S. Bryan, budget director, sales division; S. L. Weusthoff, office and field service department; Charles Mentel, order department; F. D. Wark, production control department; Harry McKnight, tool division; and M. L. Fischer, buyer.

25-Year Club Group Is the Old 'Delco-Light Crowd'

DAYTON, Ohio — Twenty-five Frigidaire employes who have been with the company 25 years—since 1916 when Delco-Light, the parent company, was formed—were honored by a testimonial dinner given by executives and department heads. The dinner coincided with the twenty-fifth anniversary of General Manager E. G. Biechler's joining the organization.

Oldest veteran honored was George H. Yehle, who is 80, while the youngest was George M. Troup, 41. R. H. Grant, sales manager of Delco-Light in 1916 and now vice president of General Motors Corp., was a special guest.

Mr. Biechler was presented with a scroll containing signatures of all those present. All of the 25-year men were given silver cigarette boxes by their associates.

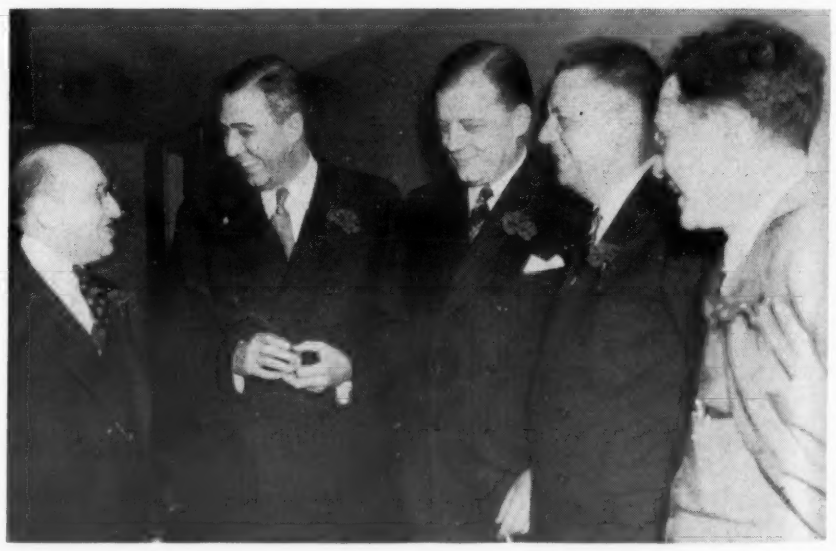
The veterans present are identified in the above photograph.

In addition to the men in the home office, there are many men in the field in Frigidaire's distributor and dealer organization who started with Delco-Light in 1916; and among them are: J. L. Fahey, Nashville, Tenn.; H. C. Moore, Louisville, Ky.; Geo. H. Myers, Richmond, Ky.; Wm. H. Griffin, Owensboro, Ky.; Henry Porter, Allen, Ky.; R. C. Andrews, Fullerton, Neb.; T. H. Vinyard, St. Louis; E. L. Calverd, Carlinville, Ill.

J. G. Lundholm, Osage City, Kan.; W. A. Fentress, Dunreith, Ind.; R. J. Richards and D. H. White, Indianapolis; F. L. Riehle, Buffalo; J. W. Condon, Jr., Seattle, Wash.; T. A. Stewart, Portland, Conn.; Dale S. Ervin, Toledo; John E. Watson, Woodstown, N. J.; Joseph E. Fahey, H. H. Bristol, and H. A. Foster, Syracuse, N. Y.

E. W. Hall, Pocatello, Idaho; S. A. Long, Wichita, Kan.; E. A. Cox, E. A. Blackburn, and B. C. Duffie, Houston, Tex.; D. B. Charles, Detroit.

Top-ranking executives in the 25-year club are E. G. Biechler, Frigidaire general manager; and R. H. Grant, vice president of General Motors Corp. and sales manager of Delco Light Co., Frigidaire's parent company in the old days. Celebration dinner for the 25-year club coincided with the twenty-fifth anniversary of Mr. Biechler's joining the organization.



These executives, representing many phases of Frigidaire's activities as a business unit, were caught by the camera at the dinner. Left to right they are: I. C. Hartzell, manager, production control; L. A. Clark, manager, household advertising and sales planning; P. M. Bratten, general sales manager, appliance division; E. R. Godfrey, assistant general manager; and W. E. Kreitzer, purchasing agent of the ordnance plant.

Mears Is Engineer on Humidifier Development

BRIDGEPORT, Conn. — S. W. Mears has been appointed sales and development engineer by W. A. Russell & Co. to promote the firm's new "Warco Moisturator."

ON LAND AND SEA!

TODAY, on land and sea, thirsty soldiers and sailors enjoy pure, cold water supplied by "Day & Night" Storage Type Water Coolers, built to Army and Navy Specifications. If you are bidding on government contracts, be sure to send for "Day & Night" Specifications Sheets covering models which meet the requirements of both branches of the Service. And if you want long, dependable, economical performance on all your water and beverage cooling jobs, be sure to specify and install "Day & Night" . . . there's a model to fit every need.

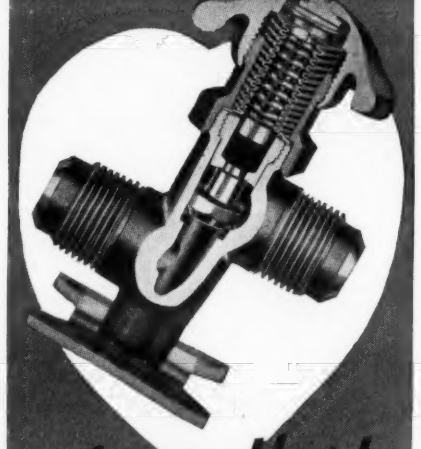
MODEL NDU11-3
U. S. Navy (SPS-770) COOLER NO. 3
"DAY & NIGHT" ALSO BUILDS COOLERS TO MEET U. S. ARMY SPECIFICATIONS

The "Day & Night" Catalog illustrates and describes a complete line of storage type cooling units, with complete specifications as well as useful tables for estimating capacities for various loads. If you do not have a copy, write for yours today. No obligation.

Marketed through the established refrigeration trade.

DAY AND NIGHT COOLER DIVISION
DAY & NIGHT MFG. CO.
2320 EAST EIGHTH STREET
LOS ANGELES, CALIFORNIA
Warehouse Stocks at Convenient Shipping Points

SYLPHON BELLOWS



are the Heart of Sylpak Valves

Says
IMPERIAL BRASS MFG. CO.
Chicago, Illinois

In *Sylpak* Refrigeration Valves, a Sylphon Bellows is the leakless feature that contributes much to the highly dependable, trouble-free service of this well-known product.

The Sylphon Bellows—the seamless, jointless, all-metal seal that has solved the problem of confining refrigerants, under various pressures, for so many manufacturers, has been the subject of continuous research and development for over 35 years.

Consult with our engineers, let them tell you about the uses, advantages and economies of the Sylphon Bellows, and ask for Bulletin HO-535.

Sylphon SEAMLESS METAL BELLOWS • AND THERMOSTAT ASSEMBLIES

THE FULTON SYLPHON CO.
KNOXVILLE, TENNESSEE
Representatives in All Principal Cities in U. S. A. and in Montreal, Canada and London, England

A NEW

STANDARD

The Bush Line includes a wide range of sizes and types. Write for catalog.

BUSH MFG. CO.
HARTFORD, CONN.
610 N. OAKLEY BLVD.
CHICAGO

Bush Mfg. Co.

COMMERCIAL COOLING UNITS

★ ★ ★ ★ ★ ★ ★ ★ ★

MILLS MIGHTY REFRIGERATION

Mills Condensing Units
By Mills Novelty Company
4100 Fullerton Ave., Chicago, Ill.

★ ★ ★ ★ ★ ★ ★ ★ ★

Anaconda Copper
Refrigeration Tubes
Dependable!

THE AMERICAN BRASS CO
FRENCH SMALL TUBE BRANCH
General Offices: Waterbury, Conn.

This Spring a Man's Fancy Ought To Turn To Thoughts of Cooking

Schools For 'Men Only' Help Develop Sales

HANNIBAL, Mo.—Cooking schools and kitchen parties are old—but good—promotions for appliances, and with the extra punch that William Henn Electric Co. puts into them, they really produce sales in the city and rural markets.

Every other cooking school that William Henn, owner, holds in the large basement of the dealership is a "men only" affair—for two reasons. Since men actually do the buying and paying for an appliance, they must be considered by the dealership, Mr. Henn believes. Besides, Mr. Henn thinks his salesmen should know how to cook in order to make more intelligent sales presentations.

So, on those particular Wednesday afternoons, men prospects and salesmen learn how to mix dough, bake, roast meat, prepare vegetables, etc. Salesmen, of course, help the prospects. During 1940 more than 400 men, chiefly farmers and dairymen, learned to use ranges, roasters, and refrigerators through these schools.

In working the rural market, Mr. Henn augments his cooking schools with kitchen parties. When REA electrified two counties surrounding Hannibal in 1937, the dealership built a six-room model home a block away from the store and furnished it completely with $4,000 worth of electrical appliances. So successful was this that Mr. Henn began his kitchen party program, which has sold more than 300 refrigerators and 100 electric water heaters in three years.

When any farm owner installs a new range, refrigerator, and other electrical appliances in his home, Mr. Henn offers a housewarming party. The owner may invite any friends he wishes, and the dealership will supply all the food, drinks, and do the cooking.

Mr. Henn supervises the party as "host" and Mrs. Henn, who is a 10-year member of the Frigidaire B.t.u. club does the cooking, usually preparing steak, fried potatoes, corn, coffee, and ice cream. Guests frequently ask, and are encouraged, to help in the preparation, which provides excellent opportunity to build them up as prospects.

These men, the ones who actually pay for electrical appliances, are learning to cook and discovering the advantages of modern electric cookery under the direction of Dealer William Henn, at the right.

As an example of how effective the kitchen party program has been, one party that Mr. Henn arranged attracted 12 guests. Within two months nine of the 12 had been sold a refrigerator, range, or washer.

Action Window Display Sells 27 Washers

DENVER — Twenty-seven of the highest priced washers were sold in one month by Herb Names—Modern Living Shop here, chiefly as the result of a window display in which a home laundry unit washed clothes all day every day. Sales of less expensive models also rose.

Passersby watched the washing action through the glass door of the unit, and were impressed by the pile of clothes supposed to be awaiting the next wash, including some badly soiled overalls and a new towel which had been soiled by rubbing on the store's waxed linoleum floor.

This Dealer 'Hides' His Appliances and Floor Sales Go Up

DALLAS, Tex.—Moving forward by moving backward may seem paradoxical, but nevertheless major appliance sales of North-Bell Hardware Co. jumped approximately 25% in the first month that the store's appliance floor display was moved from the well trafficed front of the store to a comparatively secluded corner in the rear.

Reason for this sudden increase is very logically explained by A. L. Van Buskirk, manager of the North-Bell appliance department. "It is often taken for granted," Mr. Van Buskirk says, "that customer traffic alone will build sales. This is probably quite true when all other factors are 'right,' but all too often in a hardware store these other factors are definitely 'wrong.'"

Until just a few weeks ago, the North-Bell company kept its appliance display right out in the heart of traffic flow. Some appliances were sold, it is true, but the percentage of floor sales seemed far below what it should be. Seldom, in fact, did floor sales top $1,000 monthly—and this despite the fact that the North-Bell organization is one of the largest retail hardware outlets in Dallas.

Then the appliances were pushed back into a convenient rear corner which had but little value for ordinary merchandising—and the unexpected happened. Sales immediately began moving upward and began to break all store records.

"The answer to this enigma seems to be," Mr. Van Buskirk commented, "that in a hardware store there is too much specific movement of customer traffic, and practically no casual shopping. The person who is planning to spend $100 or more on an appliance wants an opportunity to discuss the purchase thoroughly. If there is a constant flow of traffic through the department, the attention of the prospective purchaser is distracted, and serious discussion with the salesman becomes extremely difficult.

"Now that our appliance department is located in the rear of the store, people have evinced a far greater interest in these lines of merchandise. We can sit down for a leisurely talk with a prospect without being disturbed by the movement of customers who may be looking merely for a pound of nails or a dozen screws.

"We still feature appliances in our window displays to draw people into the store, but now we close all our appliance deals in our relatively isolated rear-of-the-store location."

Salesmen Are Featured In Advertisements

ASHEVILLE, N. C.—To help make its salesmen familiar figures in the community, Reusing's appliance store here has been running their photographs, together with thumbnail biographical sketches, in a series of advertisements in the local newspaper.

MKB Concentrates on 'He-Man Cooks' as Range & Heater Drive Gets Underway

NEW YORK CITY—Spring campaigns on electric ranges and water heaters are already under way, reports Modern Kitchen Bureau, with nearly a thousand "He-Man Cook" window displays in use by utilities and dealers in 38 states, and more than 50 power companies on the air with the Bureau's transcription of 16 one-minute announcements.

Typical of power company-dealer activities built around the "He-Man Cook" campaign on electric ranges are those of Carolina Power & Light Co., West Penn Power Co., British Columbia Electric Railway Co., Electrical Association of Philadelphia, Connecticut Light & Power Co., and Mountain States Power Co.

Carolina Power & Light has produced its own campaign book under the title, "The Switch Is to Switches," and has placed 33 of the He-Man Cook displays among its dealers, together with the "famous recipes by famous men" booklets as handouts. E. N. Pope, director of advertising and sales promotion, is managing the drive.

West Penn Power, under the guidance of Harry Restofski, sales promotion manager, has placed 70 of the window displays among its dealers, and is exhibiting the original James Montgomery Flagg display painting in its downtown showrooms. The British Columbia company and other utilities are placing up to 50 window displays each with territorial dealers.

The "He-Man Cook" campaign is credited with attracting more independent dealers into an MKB campaign than have taken part in any of the previous years. One dealership, the Luthe Hardware Co., Des Moines, Iowa, has 25 displays in use.

Stickers on Direct Mail Sell Additional Units

ALBUQUERQUE, N. M. — Extra power has been added to direct-mail sales literature by the Reidling Music Co. in the form of a simple sticker attached to the literature reading, "this can be added to your account."

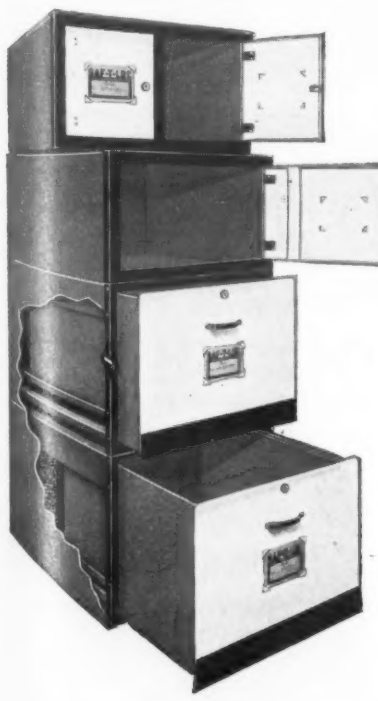
Every two months the company checks its list of appliance owners, noting those who have not purchased certain additional appliances. For example, at the start of the refrigeration season, the company assembles the names of washing machine owners who have not bought late model refrigerators and sends them refrigeration literature with the special sticker.

We DON'T Build These

Refrigerators, Refrigerator Show Cases, Refrigerated Cars, etc. We leave that to those who are best qualified, by experience — manufacturing facilities — ability — to do a good job for those who use them.

But We DO Build These

Up-to-the-minute, sanitary, substantially constructed and flexible Food Storage Lockers. We have proven time and again that we know the food storage locker industry from the ground up and what it needs, by anticipating these needs and building a locker to fit them, long before the need became apparent.



Our entire organization and manufacturing facilities are devoted exclusively to the manufacture, research and development of food storage lockers. We believe in doing one job and doing that job well.

Investigate MASTER Before You Buy

With 3 types and 30 different sizes Master can fill your needs. Illustrated is the SAF-T-LOC and the "2 in 1" Convertible SAF-T-LOC. Send for complete details. Learn how Masterbuilt Lockers can save on erection costs.

Endorsed and sold only through distributors of refrigeration and insulation.

MASTER REFRIGERATED LOCKER SYSTEMS, Inc.
121 Main St. Sioux City, Iowa

Over 200,000 Masterbuilt Lockers in Use

QUIZ

FOR REFRIGERATION DEALERS, SALESMEN, SERVICE MEN

If you know your stuff, you find selling's easy

1. Why can a knowledge of design influence a prospect?

2. What chemical development helped bring refrigerator prices down to where people who couldn't afford them eight years ago can now buy them?

3. Suppose Friend Husband says, "Harrrumph! Do you recommend this unit because of the 'Freon'?" He's asking about:

   a. the insulation around the door
   b. the make of motor
   c. a type of vegetable compartment
   d. the refrigerant
   e. the temperature control
   f. the catch on the ice chamber
   g. the process used in welding the case.

4. What feature of modern refrigerators is of primary importance to the large majority of today's prospects? Why?

5. Why is it important to know motor ratings?

6. What *one* finish combines all the qualities women want to such a degree that it's the finish for the overwhelming majority of today's refrigerators?

7. Do you know the answer when a wiseacre asks you: "Who's Yehudi?" (Have you heard of this mysterious little guy who is always popping up in out-of-the-way places?)

8. Check the reasons why DULUX is so popular with prospects:

	Check
a. It stays white.	____
b. It's easy to clean.	____
c. It retains its gloss.	____
d. It's resistant to chipping, cracking.	____
e. It's resistant to food, household grease stains.	____
f. It is pre-tested for durability, wearing qualities.	____

YOU'LL FIND THE ANSWERS ON THE FOLLOWING PAGE

DU PONT DULUX FINISH ON EXTERIOR

DULUX DU PONT

THE MODERN FINISH FOR MODERN LIVING...*It saves work*

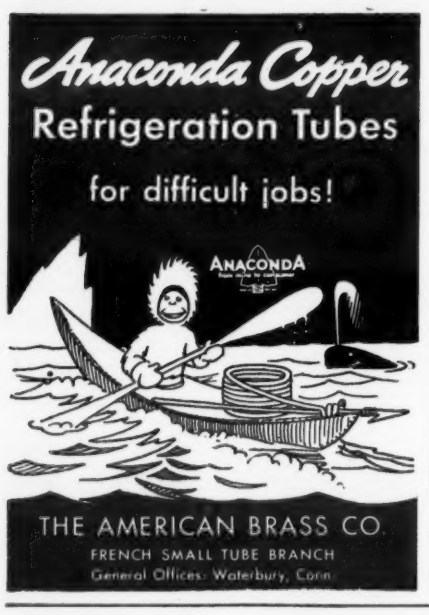
Massachusetts R. S. E. S. Holds First Meeting

WORCESTER, Mass.—With Stewart B. Garland as its first president, the Massachusetts State Association of the Refrigeration Service Engineers Society received its charter from National Secretary H. T. McDermott at a recent meeting here.

The new group, which has chapters in Worcester, Springfield, and Boston, also elected the following: first vice president, Charles C. E. Harris, Boston; second vice president, Harold C. Lambert, Springfield; treasurer, H. Pierce Goodney, Worcester; secretary, Charles A. Adams, Springfield; and sergeant-at-arms, Bertil Stenmark.

Directors are Thomas H. W. Cronk, Worcester; J. Lawrence Hall, Nashua, N. H.; and W. J. Plante, Springfield.

Mr. Garland of Worcester is a director of the national society, and served as chairman of the organization committee.



Serviceman Tackles Problem of a Unit That Won't Stop Running

Camas, Wash.

Editor:

Halp! I recently undertook, against my better judgment, to repair a refrigerator which had been damaged in moving. Damage consisted of broken suction and discharge lines at the compressor of the so-called Meter Miser unit. The unit ran for a time before the owner noticed anything wrong, hence the oil charge was pumped out through the discharge opening.

I supposed that repairing it would be the simple operation of repairing the tubing, purging, and recharging with gas.

But, woe is me, I had trouble.

I proceeded as follows:

Drilling out the connections in the compressor body, I soldered in pieces of tubing joining them to the respective lines with solder couplings. Then by means of another compressor, connected to the service valve on the suction line, I drew a 30-inch (by my gauge, recalibrated recently) vacuum leaving it over night as a leak test.

Next morning I broke the vacuum with gas, F-114 substitute, put in ¾ of a quart of Capella "D" oil, charged 19 ounces of gas into the unit, and fondly hoped for frost to appear. Not so.

The gauge on the suction line indicated a stoppage at the compressor. After 12 or 15 starts, during which the suction pressure would drop, then raise to 15 or 20 lbs., it started to refrigerate. Running time was long, idle periods short, but as the owner was in a hurry I delivered the job, thinking that it would return to normal after a few hours.

A couple of days later I got a complaint. The machine was running almost continually. It would shut off, but restart almost immediately.

I noticed that as soon as the compressor stopped, there was a loud gurgling sound, the refrigerant running into the evaporator, I thought, through the liquid line.

With the gauge on I found that the suction pressure was coming up to about 20 lbs. within a minute or so after the machine stopped. Back pressure while running was about 10 inches.

My theory was an undercharge of oil, the liquid being in such a thin state that the restrictor was allowing it to pass into the evaporator too readily. So I added ½ pint of oil.

After three hours running time, during which the suction pressure went from 20 inches to 20 pounds, I got a light coating of frost on the evaporator.

I had to leave the job, so gave instructions to shut it off if it had not cycled of its own accord in another hour. I haven't been back, yet.

The discharge line is hot, the suction line cold, indicating that the compressor is O.K. There is a gurgling sound at the evaporator rather than a boiling, yet the cussed thing don't get cold like it should. If there were a shortage of gas at least part of the evaporator should frost. If it were overcharged, the suction line should frost. I haven't overlooked the possibility of a bad check valve. But would the discharge line get hot then? And how would one check that possibility? Would not an overcharge of oil result in abnormally low back pressure?

I explained the first hour's operation as follows:

Charging the oil into the suction line, and being of rather high viscosity, it would not readily enter the compressor body through the very fine mesh screen there. Then, after finally going into the condenser, it and the refrigerant wouldn't enter into solution right away, resulting in "gobs" of oil being drawn into the suction line. That would explain the action of the gauge. But if so, how long should that condition last?

Have you any information on the characteristics of "Herveen?"

By the time you get this, I will have either given it up as a bad job, or will have "fixed" it, probably not knowing how, but your ideas will be very much appreciated.

D. L. N.

Answer: We put your question up to a man who is very familiar with "Herveen" and he has just suggested the following answer:

"From the contents of D.L.N.'s letter, we believe that he has a bad flapper valve in his compressor.

"We would suggest that D.L.N. follow these instructions in addition to those on our standard instruction sheet. His job should be completely evacuated and the oil blown out of the evaporator and the compressor. The compressor should then be checked for efficiency and upon being found or made O.K., should be filled with 7 ounces of oil. The unit should be recharged with 15 ounces of Herveen, drawn in through the low side as a vapor. The normal back pressure at the time the unit cycles should be approximately 10 inches with a normal back pressure at the time the unit cuts in to about 1 pound.

"We should be very pleased to hear further from D.L.N. concerning this recalcitrant unit.

Technical Data Given On Lindsay Structure

CHICAGO — Intended chiefly for the designer and engineer, a new pocket-sized 16-page booklet explaining the technical and practical sides of Lindsay Structure has been published by Dry-Zero Corp.

Harvey B. Lindsay, inventor of the prefabricated all-steel building material and president of Dry-Zero, wrote the book, which explains the basic principle of the material, describes its development, gives results of laboratory and field tests, and lists its uses.

Nebraskan Opens 3rd Locker Storage Plant

PLATTSMOUTH, Neb. — A. B. Rogers has completed installation of a 7½-hp. York-equipped frozen food locker plant here. The plant has a 500-locker capacity.

The Service Man's Notebook

By Henry Kronke

Mr. Kronke, a service engineer in New York City, compiles useful, handy data for use in his work as he finds a repeated need for certain kinds of information. The editors suggest that service and installation engineer readers of the NEWS cut these tables out for their own notebooks.

DISPLAY CASES

HEAT LEAK IN B.T.U. PER DAY PER FOOT LENGTH OF CASE. NORMAL DUTY IN A 90° F. ROOM.

Type of Fixture	Temperature To Be Expected	B.t.u. Per Day Per Foot of Case
Top Display, Double Glass, 2" Insulation.....	40°—42° F.	4,320
Top Display, Triple Glass, 3" Insulation.....	38°—40° F.	3,240
Full Display, double glass	40°—45° F.	4,990
Full Display, Triple Glass, 3" Insulation.....	38°—45° F.	3,744
Double-Duty Case, Coil in Display and Storage Section, Double Glass	40°—45° F.	4,990
Double-Duty Case, Coil in Display and Storage Section, Triple Glass, 3" Insulation.....	38°—42° F.	3,744

BAKERY REFRIGERATION

Storage Temperatures:		Storage Temperatures:	
Yeast	40° F.	Powdered Milk	30° F.
Dough	45° F.	Oleomargerine	30° F.
Milk	40° F.	Eggs in Shell.....	40° F.
Cream	40° F.	Butter	40° F.

The temperature of the water for mixing dough should be 40° F. and the dough should leave the mixer at 80° F. When water and flour are mixed heat is generated. This heat of hydration is 6.5 B.t.u. per pound of flour. The heat generated in the dough by the mixer arms is 42.5 B.t.u. per minute per horsepower of the motor.

In order to have the dough leave the mixer at 80° F. the mixer usually is provided with jackets through which cold water is circulated. This water should enter the mixer jackets at 40° F. and leave at 50° F.

Changed Display Tactics Bring Big Sales Boost In Department Store

MEMPHIS, Tenn. — Raising the average unit price of appliances $20, adding 100 units a year to all appliance lines, and increasing the average price of gas ranges sold from $49.50 to more than $90 are the results of changes made two years ago in the merchandising of major appliances by Lowenstein's department store.

Twice as much display space for gas ranges was provided when Buyer Frank Romeo moved this line from the electrical appliances section to a central location on the housewares floor. Seven ranges are placed between elevator doors where they can't be overlooked by customers, and the prices of these models run from $111 to $140.

In the main display space some thirty models are grouped into apartment, small home, and larger home sections. In the rear there is a small display booth where one range is kept hooked up for demonstrations.

The store maintains an outside selling crew of five specialty men, who merely "deliver" prospects to the seven expert floor salespeople for the actual selling. The outside men are paid full commission when they bring in the prospect or the prospect presents the salesman's card.

Added to this are newspaper advertisements and window displays keyed together—every advertisement has a window with the same theme. So successful has this been that the gas range section gets the largest lineage of any department in the store.

DISTRIBUTORS WANTED
For the Famous Multiplex Dispenser for Soda, Seltzer, Coca-Cola, Ginger Ale, etc. The Multiplex Fixture Dispenses Seltzer at 1¢ Per Gallon, Other Drinks at 1½¢ Each.
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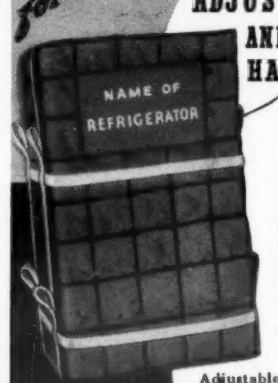

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DULUX
REG. U.S. PAT. OFF.
FINISH
ON EXTERIOR

Answers to the DuPont Quiz on preceding page

1. You can get a prospect's quick interest by pointing out streamlined design; knowing how the manufacturer selected the design after careful preliminary study; why the design of the refrigerator you're demonstrating provides more space and is more suitable for her needs.

2. The development of DULUX Enamel by Du Pont research chemists.

3. Freon, produced by Kinetic Chemicals, Inc., is a *safe, harmless* refrigerant used in refrigerators and air conditioning units.

4. The finish. It's the first thing she *sees* . . . makes that vital first impression. Women invariably ask, "Will this finish last? Is it easy to clean? Is it apt to chip or crack or be affected by food and grease stains?" How the finish answers these questions is vital in *every* sale.

5. This knowledge comes in handy. For example: A prospect, whose refrigerator is four or five years old, likes the new model you're showing, but says, "The price is a little high." You can point out that the *lower* horsepower motor on the new model, thanks to recent engineering refinements, can deliver the same performance as the *higher* horsepower motor on her present cabinet. Because of this stepped-up efficiency, the new model uses less current with substantial savings every month.

6. Du Pont DULUX.

7. Yehudi is the little man who turns out the light when you shut the refrigerator door.

8. If you've checked every reason, you're 100% right.

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'Plating' The Locker Plant

Some Principles of Equipment Sizing and Selection Which The Service Engineer Can Use in Solving His Applications Problems

TORONTO, Ont., Can. — What amounted to a "short course" covering the application of vacuum plates to locker plant installations was presented by A. F. Sawyer of Dole Refrigerating Co. before the recent convention of Canadian Refrigeration Service Engineers Society members in the King Edward hotel here.

In addition to detailed instructions for estimating the plate area required for a specific size of plant, Mr. Sawyer also presented suggestions for accessory and control equipment, insulation requirements, and selection of the proper capacity refrigerating machine for most efficient plant operation.

"A picture of the usual locker plant setup consists of four sections: a chill room to cool fresh-killed stock, fruits, or vegetables; a processing room for cutting and wrapping; a quick-freeze cabinet or room where the wrapped products are quick frozen; and a locker room where the frozen package goods are stored," Mr. Sawyer said. "All except the processing room are refrigerated, although occasionally processing is done in the chill room.

"The chill room is usually held at 36° to 38° by means of vacuum plates overhead or other means. Proper cooling surface and temperature must be maintained to give desired humidity, or products will dry out rapidly.

"When the product is ready for freezing, it is placed on freezer plates held at —20° in the freezer room or cabinet. The freezer room is usually built into one corner of the locker room as a cabinet of three pieces—front, side, and top. Depending on size, the front will have one or two doors for reach-in service. Inside freezer cabinet are four to 10 plates 22 inches wide and 4 to 9 feet long. These are usually mounted on a freezer plate stand of angle iron, with plates at various spacings of 3 to 8 inches. It will be found more convenient to use the 3-inch spacing at about shoulder height for easier reach-in.

"Freezer plates are always connected in series, but no more than 75 to 90 sq. ft. of plate surface (figuring both sides) should be used to one expansion valve when 'Freon' or methyl gas is used. With ammonia, 150 sq. ft. of plate (both sides) may be used. Expansion valve may be connected to bottom or top plate; bottom expansion flooding the plates a little better and cooling lower plates more rapidly, and top expansion giving more even temperature from top to bottom. If products are of standard thickness, plate spacing can be arranged for packages to fit snugly between plates, providing the most rapid freezing.

FIGURING PLATE AREA

"To figure the area of fast freeze plate needed, allow 7 to 9 lbs. of meat per day per square foot of plate. Since the average 300-locker plant will turn over 2 lbs. of product per locker, or 600 lbs. of product per day, we divide 600 by 9 to obtain 66 sq. ft. of plate surface (one side) or six 22-inch by 72-inch plates. Two thermostatic valves would be used for these.

"After freezing, the product is removed from the plates and stored in lockers in the locker room. Lockers vary in size, one common size being 18 inches wide, 18 inches high, and 30 inches long. They are usually built up five tiers high, depending on room height, the lower locker being a drawer type for easier accessibility.

"Locker plates 12 inches wide and 72 to 144 inches long are made up in banks of four to six plates with hangers. They are suspended by ½-inch iron rods (furnished locally) from the ceiling and located over the aisles. The plates in each bank may be connected in series or with a header in parallel. If in series, no more than four 144-inch plates (96 sq. ft.) can be used to one valve.

"However, six 144-inch plates may be used with header type since the pressure drop is low. In either case the B.t.u. rating of valve should be somewhat in excess of plate requirements. Too small an orifice will not pass sufficient gas and too large an orifice will cause surging, that is, the valve will over-feed the plates, frosting back to the compressor. The valve will then close entirely thus starving the plates for a period.

"Overhead banks of plates should be set up horizontally, checking with a spirit level both ways. Plates should show even frosting in operation. With header hook-up, if plate nearest expansion valve should not show even frost line, lower the bank about ⅜ inch on that side.

"Overhead locker plates and quick freeze plate shelves are usually finished with aluminum paint, since no rusting will occur at the zero temperatures. Plates used in the chill room at defrosting temperatures should be ordered with zinc finish for rust prevention.

REFRIGERANT LINES

"The return line should be large enough to prevent pressure drop, probably 1⅛ inches o.d. for a 3-hp. compressor and 1⅜ inches for 5 hp. On leaving manifold use a 6-inch riser or slope tubing upward to allow flooding of plates. Arrange returns so flooding of one set of plates will not allow liquid to run back in line and affect thermostatic valve bulb on another set of plates.

"With 'Freon' or methyl, use ⅜-inch liquid lines to expansion valves and it is convenient to have hand valves ahead of each expansion valve.

ACCESSORY EQUIPMENT

"A heat exchanger should be used with 'Freon' or methyl, installed just outside locker room. It can save 10% on the electric bill and prevents slugging back to the compressor. A sight glass in liquid line is recommended.

"A good sized dehydrator should be used in the liquid line. An oil separator is not a necessity, but may improve operation on some jobs. Oil troubles have been serious in the past, logging the plates and damaging compressors through lack of oil. However, it has been shown that this has been largely due to operating system with valves not open enough. Sufficient liquid refrigerant in the plates is necessary to wash the oil back to return line for return to crankcase.

"Do not be misled by light frost on return when adjusting valve. Hold hand on return line to warm up tubing. If frost melts off, it indicates no liquid. If ice coating cannot be melted off, liquid is shown. If these conditions alternate, showing slight surging, valve setting is about right.

CONDENSING UNITS

"A separate compressor is recommended for the chill room since gas temperature required is about 20°. Often a ½-hp. compressor will take care of chill room, whereas if one large compressor is used for the whole plant, 1 hp. additional in size is required. Current costs will then be greater with the latter. A constant-pressure valve and check valve are needed for this layout.

"Since new compressors are shipped with only a small holding charge, it will be necessary to add refrigerant to take care of all plates and lines.

"Oil level in crankcase should be checked after first day's run, at end of first week, and monthly thereafter. Use only high grade oil specified for particular refrigerant and —20° cold test or lower.

CONTROL EQUIPMENT

"It is usual to control the compressor by back pressure switch; for 'Freon' and depending on conditions, cut in at about 12 lbs. and cut out at 2 lbs. When one compressor is operating locker room and freezer plates this takes care of usual operation. However, in cold weather when there is not much load on locker room, but considerable fast freeze work to be done, the compressor may not operate enough for rapid freezing and continued cooling of overhead plates is unnecessary.

"To take care of this situation, a solenoid valve in liquid line to locker room is recommended, controlled by a room thermostat. This allows the overhead plates in locker room to pump out so receiver is well supplied with liquid. If heavy freezer loads are anticipated, such as loading several of the plates at once, back pressure may rise above 10 lbs. and it will be necessary to have a check valve in return from overhead plates to prevent condensation and loading of plates with liquid.

INSULATION IMPORTANT

"It is assumed the plant will be laid out by competent engineers thoroughly familiar with locker plants. It must be convenient to work in, economical to operate, and stand up for many years. To insure being economical and durable use only good insulation installed correctly. For low temperature rooms it must be at least 6 to 10 inches thick, depending on material used; and all walls, floor, and ceiling moisture-proof and vapor-sealed on the outer side of insulation. This is highly important, as any moisture or air leaking in will cause condensation in walls. The inner walls need not be vapor tight, a slight amount of breathing being an advantage in keeping insulation dry.

"To illustrate the method of figuring a 308-locker plant, we assume temperatures of 90° outside and 5° inside. If 8-inch insulation is used, outer area will be 1,810 sq. ft. Multiplying this by .9, (K factor for 8 inches on 24-hour basis) and 85° (temperature difference), we get a wall loss of 138,000 B.t.u. per 24 hours. Adding 20% for service load, the result is 166,000 B.t.u.

"To determine overhead plates necessary, we assume a 2 K factor for plates (on hourly basis) x 16° (temperature difference between air and plates) giving a result of 32 which is B.t.u. removed by each square foot of plate per hour. Since we expect to operate compressor 18 hours a day during warmest weather we have 32 x 18, or a factor of 576.

"The total load of 166,000 B.t.u. divided by 576 gives a result of 288 sq. ft. of plate necessary. Each 12 by 144-inch plate has 24 sq. ft. of surface, so 12 will be required, in three banks of four plates each.

"Using 2 lbs. of meat per locker per day as an average. we estimate 616 lbs. of meat per day. To figure freezer plate surface required we divide 616 by 9 and obtain 68.5 sq. ft. one side. We would probably use six 22 by 72-inch plates. The meat freezing load on plates is about 12,000 B.t.u. per 100 lbs., so 74,000 B.t.u. per day will be needed for this. 166,000 B.t.u. plus 74,000 B.t.u. gives result of 240,000 B.t.u., total for 24 hours. Since the compressor must produce this in 18 hours, we divide 240,000 B.t.u. by 18 to get 13,300 B.t.u. per hour.

"The plate temperature needed is —11° to obtain 16° T.D. between plates and room, but since there is about a 3-lb. pressure drop through plates and return line, or 6° gas temperature difference, the compressor will operate on —17° gas.

"Looking at manufacturers' tables we find a 'Freon' 3-hp. compressor operating at —17° gas, rated at 14,200 B.t.u. per hour when using 80° condensing water. Thus for the conditions above, it will be large enough for freezer and locker room.

"The chill room is figured on the same principle as the locker room. Assuming 4-inch insulation and one wall against the locker room, with no heat loss, the total wall loss with service factor is about 78,000 B.t.u. per 24 hours. We then allow about 3,900 B.t.u. per 100 lbs. of meat to be chilled or about 24,000 B.t.u. per day for cooling warm meat 90° to 36°. This added to 78,000 B.t.u. gives 102,000 B.t.u. To find the plate surface necessary we use a 2.5 K factor x 16° T.D., giving a result of 40, which is B.t.u. removed by each square foot of plate per hour.

"Operating the compressor 18 hours a day, the factor is then 40 x 18, or 720. The load of 102,000 B.t.u. divided by 720 gives 142 sq. ft. of plate needed. Accordingly, six 12-inch x 144-inch plates are selected. If a separate compressor is used on chill room, the load of 102,000 B.t.u. for 24 hours is divided by 18 to obtain hourly load of 5,660 B.t.u. at 20°. This is just over the capacity of most ½-hp. condensing units, so a ¾-hp. unit will probably be required. To get a perfectly balanced job, a slightly smaller pulley may be used on the motor, giving the effect of a ⅝-hp. motor. The idea is to keep the gas temperature in the plates not more than 16° below room temperature, otherwise the relative humidity of air may be low and dry out food products in room.

"If the plant is to operate by one compressor, we add the 16,000 B.t.u. per hour necessary for locker room and freezer, and the 5,650 B.t.u. per hour for chill room, and obtain 21,650 B.t.u. per hour required. We find a 5-hp. compressor of about 23,000 B.t.u. per hour at —17° gas under manufacturers' rating tables.

"There are many factors to be considered for correct design, only a few of which can be discussed here. The method of figuring given is rather general, omitting some details. For instance, a heavy sun load may require 2-inch extra insulation on exposed surfaces. If outside temperatures above 90° are anticipated, or if 0° is to be locker room temperature, it may be necessary to use heavier insulation.

"Bear in mind also that compressors may become less efficient after a period of time, resulting in longer running time of compressor. Since water-cooled compressors are usually used, the temperature of available condenser water in mid-summer is important in selecting compressor."

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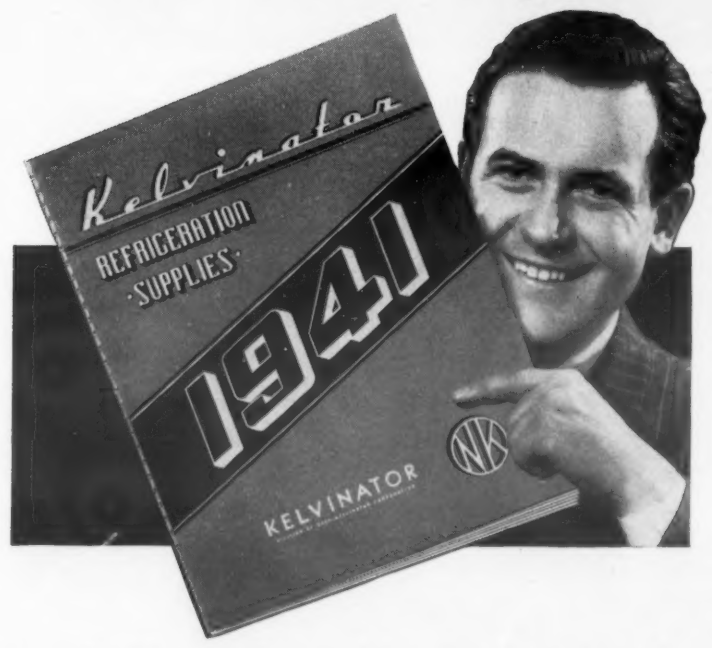

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A Dealer Offers Some Flat 'Do's' and 'Don'ts' To Power Companies

He Doesn't Object To Utility Merchandising Of Appliances - - If They Do a Promotion Job

By T. T. Quinn

CHICAGO — No thinking dealer wants to drive utility companies out of the appliance merchandising business—as long as they are willing to do their selling along lines with which the individual dealer can compete, J. T. Meek, executive secretary of the Illinois Federation of Retail Associations, told the eighth annual sales conference of Edison Electric Institute at its general session on April 3.

Presenting "A Dealer's Viewpoint on Utility-Dealer Selling," Mr. Meek declared that "fair and aggressive competition is all that the retailer asks of the utility." He urged power companies to regard their load-building as a merchandising business, and to sell their appliances on a profit basis that makes it possible for the retailer to compete.

Demand for electric current on most power companies' lines depends, to a great degree, upon the dealer's efforts and ability, Mr. Meek said. He advised utilities to develop dealer cooperation and aggressive dealer promotion of appliances as essential to a complete selling job.

Dealers may be aloof or inactive because of the kind of competition that the utilities themselves have set up, the speaker continued. On the other hand, however, many retailers are benefiting from utility-dealer promotion plans and wouldn't know what to do without them, he pointed out. In areas where a sincere utility cooperative program is in effect, many dealers consider the power company as the cleanest competition they have, he declared.

What utility practices do dealers find most objectionable? Among the worst, said Mr. Meek, are:

HERE'S THE 'DON'TS'

Mark-ups which the dealer cannot approach; sales terms which commercial financing companies cannot meet; trade-ins higher than that which the average dealer can allow; aggressive utility selling of appliances which already have wide public acceptance, and which could properly be considered in the dealer's field; and detraction of the dealer's appliances in an effort to promote the particular brand of equipment they happen to be merchandising in the territory.

For the power company desiring to maintain good business relations with its dealers, and at the same time develop sound merchandising of its own lines, Mr. Meek had several pertinent suggestions.

"First, and most important, build your load at a profit," he counseled. "Secondly, remember that load can be built most cheaply—and profitably—by having as many aggressive, cooperative dealers as possible. Next, abandon all unfair merchandising practices relating to dealers; and, finally, sell as aggressively as you want to—but do it on a profit basis."

A program of sincere dealer cooperation need not interfere with the utility's own merchandising efforts, Mr. Meek declared. "It is entirely possible for the public utility to merchandise appliances, and at the same time promote dealer sales," he said. A workable dealer cooperative plan, Mr. Meek said, would include:

- - - AND THE 'DO'S'

1. Adherence by the utility to conservative merchandising policy, including mark-ups, sales, and financing terms that dealers can meet, and elimination of frequent "clearance" sales.

2. Arrangement of utility salesmen's commissions in order to:

Encourage them to sell appliances the company wants sold;

Throw the sales of generally accepted appliances to dealers;

Stimulate utility salesmen to devote most of their sales efforts to appliances still in the pioneering stage;

Help the dealer to sell certain appliances.

3. Assistance offered to dealers by the utility, including advertising and display helps, sales training, and demonstrations—all designed to enable dealers to do more business, at better profit.

Properly encouraged, the independent dealer and salesman can become the strongest ally the power company could want, Mr. Meek declared. Where dealers have been tried and found wanting, no one can object to the utility's stepping in and doing the merchandising, he said—but at least the independent organization rates a fair trial before being shut out by methods which it cannot meet.

HOW TO SCARE PROSPECTS

Where there is bickering between the power company and dealers, he continued, it is apt to have an adverse effect on the consumer, who quite naturally becomes wary of entrusting his appliance problems to either of the warring elements. He urged that the "front-office boys" be made to see the faults of any blind-quota system and consider instead the individual problems of the different territories, and the good that is bound to follow a long-range program of cooperation, rather than competition.

Admitting that sound dealer cooperative programs are now in effect in several territories throughout the country, Mr. Meek nevertheless declared that an unfriendly feeling toward the utility's type of competition existed today in more areas than he liked to think about.

When It's Fish Fry Time In The Capital

This group of pictures, furnished through the courtesy of Kerotest Mfg. Co., were taken at the fish fry held last month by the Refrigeration Supply Co., Washington, D. C., attended by some 200 members of the trade in the capital area. Sitting down to their fish are (left side of table, front to rear) A. R. Black, Mueller Brass Co.; M. J. Trautman, Refrigeration Supply; K. R. Davis, Kerotest Mfg. Co.; F. Jarrett, Economy Refrigeration Co. (Right side of table, front to rear): N. E. Burdette, Refrigeration Supply; C. E. Logan, Superior Valve & Fittings Co.; Harry Klinger, Kramer-Trenton Co.; John Massey, W. A. Brandenburg, and Milton Rosenfield, Refrigeration Supply Co.

Business gossip and the time honored sport of elbow bending occupied much of the guest's time. Invitation cards read "from 2 p.m. until." Most everybody stayed "until." In a soldering contest in the afternoon Paul Shine of Washington Refrigeration Co. won, his time of 5 minutes, 40 seconds was called a national record. Lyle Copenhaver of the Washington Supply Co. was second, and W. R. Hubbard, Lux Appliance Co., third.

Mrs. N. E. Burdette (left) set up the commissary right in the shop, and Margaret Whaley quit secretarying for the day and served the hungry mob.

The entire crew of Washington Refrigeration Co. attended in a body. (Man just right of center has what appears to be a long drink.)

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AN EXCLUSIVE PROCESS OF CHEMICAL CLEANING
EVERY inch of Superior Copper Tubing is chemically cleaned inside and out by a process developed in our plant. The high sheen inside and outside of Superior Tubing is partially due to the thorough removal of drawing compound before annealing. Here is just another reason for the uniform quality of Superior Tubing as demanded by refrigeration engineers.
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Operating and Service Methods For Dry-Expansion Counter Freezers

By Arch Black and Dean C. Seitz

Editor's Note: This article contains information on Tuthill 1-gallon counter-type ice cream freezer, and is one of a series of articles on the servicing of counter freezers which have been appearing in issues of AIR CONDITIONING & REFRIGERATION NEWS in the past several months.

Operating Instructions

A. For Frosted Malteds. To start the Freezette in operation for frosted malted milk, pour in 2 quarts of mix and push the start button on the left hand side of the machine which is marked "Freezer." This starts the refrigeration and also the beater. Set the cold control at point No. 4, which is approximately 26° F. On the right hand side of the machine is the beater switch. This should be in the "stop" position.

When the batch is frozen to the temperature as set by the cold control, the motors automatically stop. At this stage 85 to 100% over-run will usually be obtained, depending on the mix. If additional over-run is required, run the beater only for a few minutes.

If a thicker product is desired, the cold control should be set towards point No. 3, but as a rule not any lower than between points 2 and 3. This will result in a colder and thicker product, but it also becomes heavier, consequently there will be less of it per batch. It is claimed that the lightest and most profitable drink results from having the cold control as close to No. 4 position as possible.

The batch in the freezer will remain at a constant temperature by keeping the freezer switch in the start position, which automatically starts and stops the refrigeration and the beater at intervals.

When a single batch is kept in the Freezette for hours, it is characteristic of all mixes to gradually grow thinner in consistency. Towards the end of the batch, it usually gets heavier. Therefore, most operators keep adding 1 quart of mix when the batch is about one-half emptied. This is the easiest and most practical for continuous operation and results in least time required for freezing between batches.

In serving, if the batch is too stiff to run out readily, push the freezer starting button and be sure to push the beater stop button after drawing off.

B. For Ice Cream. Best results are usually obtained by freezing down to a temperature of 24° F. To obtain this, the cold control setting should be put about half way between the No. 2 and No. 3 points.

When the machine automatically shuts off about three minutes additional beating will give proper over-run and a light, smooth ice cream. This is done by using the beater switch button.

The ice cream can be kept in the freezer and served as unhardened ice cream, or it can be drawn off and placed in a hardening cabinet for the usual type of hardened ice cream.

Note: Too long beating will cause loss of over-run.

GENERAL INFORMATION

The red signal on the left side lights up when the freezer switch is in start position. It serves as a warning that the compressor and beater will start at any instant.

The red signal on the right side lights up when the beater motor is running. Be sure both switches are in stop position and both red lights are out before removing front cover or beater.

BEATER

Proper clearance is 1/32 inch between scraper blade and cylinder wall.

LUBRICATION

Freezer Cover. Apply petrolatum with finger to inside of beater bearing in freezer cover each time freezer is cleaned.

Freezer Shaft. Each time freezer is cleaned turn petrolatum cup until petrolatum starts to appear inside freezer shaft hole. Do not turn petrolatum cup when there is ice cream in the freezer.

Motors. It is recommended that these be oiled about every 500 hours of operating service.

Important When Rendering Service

As will be noted from Fig. 32 a blower is used instead of the usual fan which is found in the average air cooled condensing unit. This is a Sirocco blower and, of course, for efficient operation the air from the blower must be directed across the condenser, and it will be obvious that this cannot be unless the hood of the cabinet is in place. Therefore, do not operate the condensing unit with the hood removed.

When it is necessary to run the condensing unit when servicing with gauges on for any length of time, these can be connected with a short piece of tubing and brought out between the hood and cabinet or base. When this is done and in order to get proper readings from the gauges, use rags or something to seal the temporary opening, which of course is necessary for the tubing out of which the gauge is connected.

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I'm satisfied with it in every respect!

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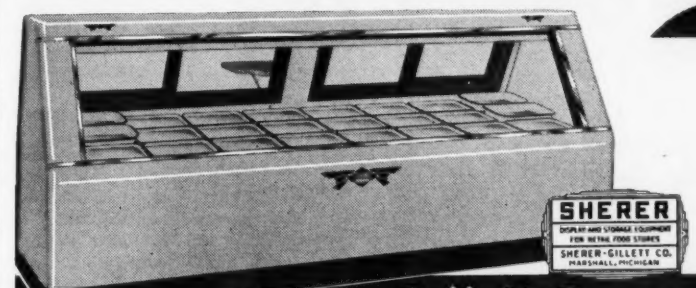

Write today for complete franchise details concerning the Sherer line.
Sherer-Gillett Co. MARSHALL, MICH.

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ECON-O-COOLER
There are more than 3500 sales representatives who profitably sell the Koch line. Yet many attractive territories are still open to aggressive sales organizations. Write today for full particulars and prices.
KOCH REFRIGERATORS
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A spacious new walk-in cooler that operates at a lower cost than was ever before thought possible. Every day a Koch Econ-O-Cooler will cut down overhead and expenses. It has greater capacity, longer life, and more efficient refrigeration.
The Econ-O-Cooler is only one of a number of standard Koch products. There are 108 standard models in the vast Koch line, including display cases, coolers, vegetable cases, and refrigerators for meats, bottled goods, flowers, bakery items, dairy products, etc. There is a Koch product to fill every need.

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SKYSCRAPER STRENGTH! SKYLINER BEAUTY!
★ Stores, restaurants, hotels, bars, taverns—all are potent prospects for bigger sales and profits when you carry the complete 1941 Tyler line. Fast-selling Reach-In Boxes, Vegetable Display Cases, Meat and other Display Cases meet every need. Write:
TYLER FIXTURE CORP., Dept. R-4, NILES, MICH.
TYLER DEALERS ARE MAKING MONEY!

Tyler Reach-Ins. Many sizes and door arrangements.
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REPLIES to advertisements with Box No. should be addressed to Air Conditioning & Refrigeration News, 5229 Cass Ave., Detroit, Mich.

POSITIONS AVAILABLE

TREASURER with manufacturing authorization control experience by well established AAA1 rated company. Doing 3 to 4 million dollar annual business. The man we want must be thoroughly experienced in manufacturing, financial, and general expense control. Under his jurisdiction will come auditing, costs, credits and collections, and general office procedure. He must be thoroughly versed in establishing and maintaining budgets. The man we want is truly an executive—one willing to accept responsibility—resourceful—who can make sound decisions quickly—and who is desirous of living and making his home in a town of about 32,000 population. His age is between 34 and 44. Electric appliance manufacturing experience is preferred. Please state your full qualifications, salary expected, and give references in your first letter. Strict confidence is assured. Address Box 1323, Air Conditioning & Refrigeration News.

LONG ESTABLISHED Mid-west manufacturer of commercial refrigerators has opening in sales department for young married man who has had basic training in refrigeration. Applicants must have at least three years experience in refrigeration field. This will be permanent position with home office. A grand opportunity for the right man. State age, experience, education, and salary expected in your reply. Box 1325, Air Conditioning & Refrigeration News.

WANTED—Retail store fixture and commercial salesman with proven record. Southern distributor, nationally known lines. Draw or salary and percentage. Reply with full data at once to Box 1326, Air Conditioning & Refrigeration News.

POSITIONS WANTED

APPLIANCE MAN for New England. Executive-type man who has functioned from salesman to sales manager prefers profitable field selling of good line in his home territory. Knows how to get outlets and keep goods moving through them. If you've been looking for the "right man" here, write Box 1327, Air Conditioning & Refrigeration News.

YOUNG MAN wants a position in refrigeration or air conditioning. Has been thoroughly trained in both fields; graduating from the Industrial Training Institute. Can give good references. JACOB DeRIDDER, Passaic Ave., W., Caldwell, N. J.

REPRESENTATIVES AVAILABLE

ESTABLISHED manufacturers agency has facilities for representing manufacturer in Maryland, Delaware, District of Columbia, and Virginia. Box No. 1324, Air Conditioning & Refrigeration News.

FRANCHISES AVAILABLE

GENERAL Refrigerator Company is announcing the new 1941 line. General Display Cases, Reach-In Cabinets, Walk-In Coolers and Beer Pre-Coolers. For almost half a century we are manufacturers of the highest quality commercial refrigerators. Compare with other higher priced lines. Write in for prices and discounts on the biggest money making line in the country. GENERAL REFRIGERATOR CO., 5th & Bainbridge Sts., Philadelphia, Pa.

SELL refrigerator display cases, walk-in coolers, reach-in refrigerators, refrigerating units, to meat markets, grocers, taverns, etc. Financing arrangements to help sell. Write for full information or see EHRLICH REFRIGERATOR MFG. CO., St. Joseph, Mo., Dept. A.

JOBBER distributors wanted for the famous Multiplex Dispenser for soda, seltzer, coca cola, ginger ale, etc. The Multiplex fixture dispenses seltzer at 1¢ per gallon, other drinks at 1½¢ each. MULTIPLEX FAUCET CO., manufacturers of dispensing fixtures for 35 years, 4319 Duncan Ave., St. Louis, Mo.

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HERE IT IS! Three catalogs in one. General Electric, Westinghouse, Majestic, Grunow Hermetic Units and compressors. Frigidaire, Kelvinator, Norge, Crosley, etc., compressors, evaporators, and parts. Complete line refrigeration parts, tools, and supplies. Write for your copy on your letterhead. SERVICE PARTS CO., 1101-3 N. 24th Ave., Melrose Park, Ill.

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GENERAL ELECTRIC DR1—DR2 Monitor Top Units exchanges $25.00 F.O.B. our factory. Send your defective unit. On receipt we make immediate shipment of completely rebuilt, refinished unit with one year guarantee. Like new in every respect. Westinghouse and other hermetically sealed units, prices on request. MACKLAM REFRIGERATOR SALES & SERVICE CORP., 220-222 W. Huron St., Chicago, Ill.

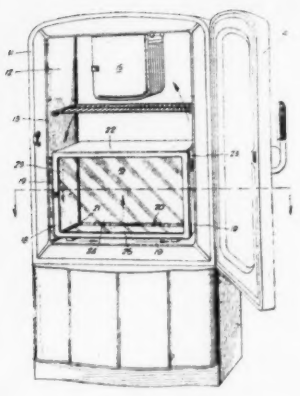
CONTROL REPAIR service. Your controls repaired by expert mechanics, with special precision equipment. Supervised by graduate engineers. We stress perfection and dependability before price. One year guarantee on domestic controls. Any bellows operated device repaired. HALECTRIC LABORATORY, 1793 Lakeview Road, Cleveland, Ohio.

CONTROL REPAIR Service. Domestic controls reconditioned equal to new at a small cost. All work guaranteed for one year. Prices upon request. UNITED SPEEDOMETER REPAIR CO., INC., 342 West 70th Street, New York City.

PATENTS

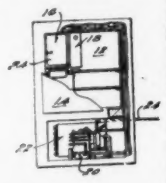
Issued In March, 1941

2,233,394. REFRIGERATION APPARATUS. John H. Ashbaugh, Springfield, Mass., assignor to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., a corporation of Pennsylvania. Application Oct. 26, 1939, Serial No. 301,354. 5 Claims. (Cl. 62—89.)



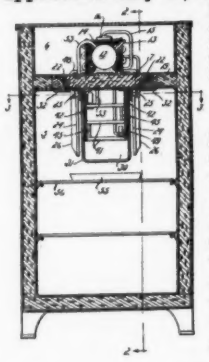
1. In refrigeration apparatus, the combination of a refrigerator cabinet, a relatively low temperature cooling element for abstracting heat from the air in said cabinet which circulates into contact with the cooling element, said cooling element also abstracting moisture from the air in said cabinet, a substantially enclosed chamber disposed in said cabinet in which a high humidity is maintained.

2,233,414. APPARATUS FOR HEAT TRANSFER. Earl P. Hubacker, Highland Park, Mich., assignor to Borg-Warner Corp., Chicago, Ill., a corporation of Illinois. Application June 5, 1939, Serial No. 277,427. 4 Claims. (Cl. 62—116.)



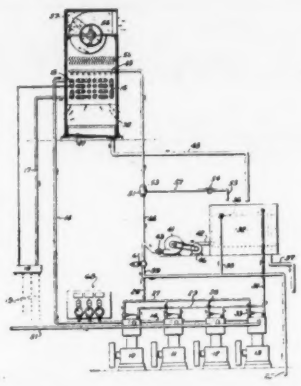
2. In a refrigerating apparatus including a heat insulated cabinet, means defining a freezing compartment within said cabinet and separated from the circulating air within said cabinet, means defining a first closed refrigerating system . . . a secondary closed refrigerating system comprising a condenser disposed in heat transfer relation.

2,233,456. REFRIGERATING APPARATUS. Lawrence A. Philipp, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Original application May 31, 1934, Serial No. 728,289. Divided and this application Nov. 11, 1937, Serial No. 174,098. 4 Claims. (Cl. 62—116.)



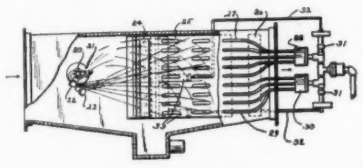
1. Refrigerating apparatus comprising a cabinet, an enclosure within said cabinet enclosing a low temperature zone including a vertical wall positioned in close proximity to a wall of the cabinet to provide an air cooling zone.

2,233,633. REFRIGERATING APPARATUS. Harold J. Mollenberg, Kenmore, N. Y. Application Dec. 29, 1939, Serial No. 311,561. 7 Claims. (Cl. 62—3.)



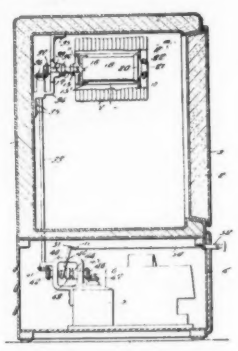
7. In a refrigerating apparatus including a water-cooled compressor, a condenser coil subject to air and water cooling, and an evaporator connected in closed circuit, means for supplying forced draft air to the surface of the condenser coil when the refrigerant pressure between the compressor and coil reach a predetermined range of values, a water tank containing water, a pump, a spray pipe and a drain line hydraulically connected in a local closed circuit for supplying water to the surface of the condenser coil, means responsive to higher refrigerant pressures for operating the pump and thereby the flow of water in said local circuit.

2,233,827. REFRIGERATION APPARATUS. Samuel M. Anderson, Sharon, Mass., assignor to B. F. Sturtevant Co., Hyde Park, Boston, Mass. Application Dec. 16, 1939, Serial No. 309,600. 8 Claims. (Cl. 261—10.)



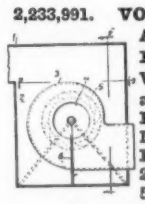
1. Refrigeration apparatus comprising an air washer, a plurality of tubes adapted to receive a volatile refrigerant, extending crosswise the downstream end of said washer, a liquid supply header extending across the upstream end of said washer, a plurality of substantially horizontally aligned flooding nozzles connected to said header and being positioned to project spray in an upwardly extending arc upon said tubes.

2,233,975. ELECTRIC REFRIGERATOR. Carl E. Epperson, Knoxville, Tenn. Application Dec. 29, 1939, Serial No. 311,688. 2 Claims. (Cl. 62—114.)

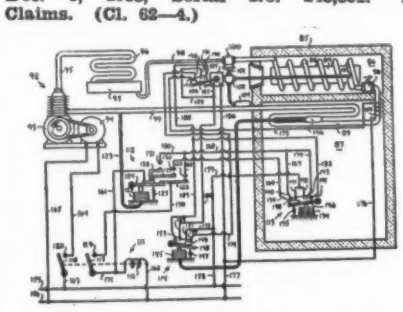


1. The combination with an ice-tray receiving chamber of a refrigerator having an open front end and longitudinal guides along the side walls thereof, of a frame slidably mounted on said guides for movement into and out of said chamber and having an open top, bottom, and front ends, a rotatable chuck in the rear end of said frame including a driven spindle extending outwardly of said rear end for coupling to a drive and a dished head on said spindle provided with a diametrical key therein.

2,233,991. VORTEX ELIMINATOR IN AIR HANDLING APPARATUS. Thomas A. Walters, Detroit, Mich., assignor to American Blower Corp., Detroit, Mich., a corporation of Delaware. Application May 27, 1937, Serial No. 145,105. 5 Claims. (Cl. 230—114.)

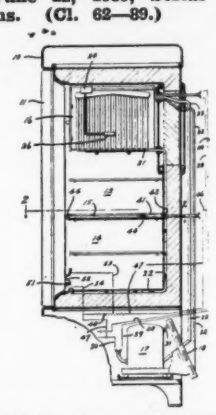


2,234,250. REFRIGERATION CONTROL SYSTEM. John L. Harris, Minneapolis, Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a corporation of Delaware. Application Dec. 3, 1938, Serial No. 243,801. 20 Claims. (Cl. 62—4.)



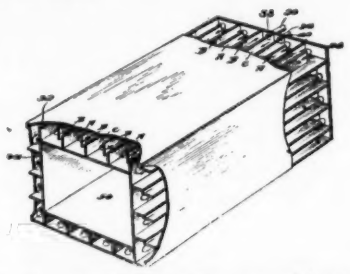
5. In a control system for a refrigerating apparatus having a compressor, first and second evaporator means, a high pressure line connecting the compressor and condenser, a liquid line connecting the condenser and the evaporator means, and a suction line connecting the evaporator means and the compressor, it being desirable to defrost the second evaporator means and not the first, the combination of, valve means in the liquid line for normally allowing liquid refrigerant to be supplied to the first evaporator means but for turning on and off the supply of liquid refrigerant to the second evaporator means.

2,234,254. REFRIGERATING APPARATUS. Harry B. Hull, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application June 22, 1939, Serial No. 280,601. 11 Claims. (Cl. 62—89.)



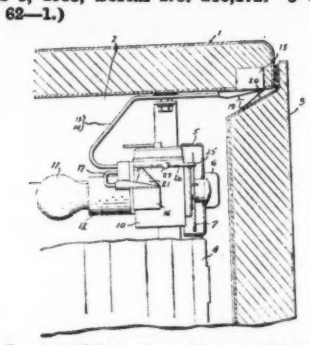
1. A refrigerating apparatus comprising in combination, a cabinet having a food storage compartment therein, said compartment being provided with an access opening normally closed by a door, means for cooling said food storage compartment, an ultra-violet lamp associated with said cabinet and adapted to emit its rays into said compartment for treating foods stored therein and for sterilizing air within said compartment.

2,234,415. QUICK FREEZE REFRIGERATOR UNIT. Walter S. Phillips, Greensboro, N. C. Application Sept. 21, 1939, Serial No. 295,970. 4 Claims. (Cl. 62—126.)



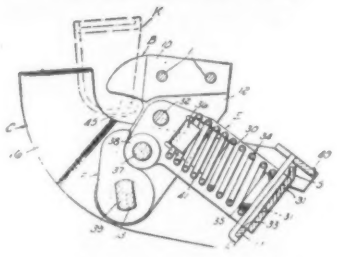
1. An evaporator for a refrigerator, comprising spaced inner and outer shells of sheet material, end wall members engaged between the end portions of said shells for enclosing an evaporator chamber therebetween, a single, longitudinal baffle comprising a strip of material extending to each end wall and having the side edges thereof engaged with the respective surfaces of the shells, refrigerating fluid inlet and outlet means disposed on each side, respectively, of said baffle.

2,234,474. REFRIGERATION. William W. Higham, Detroit, and Stanley H. Morse, Dearborn, Mich., assignors to Universal Cooler Corp., Detroit, Mich., a corporation of Michigan. Application April 5, 1938, Serial No. 200,172. 5 Claims. (Cl. 62—1.)



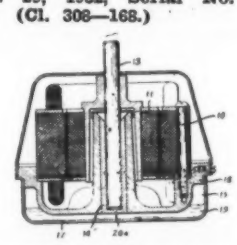
1. In a refrigerator, the combination of a compartment to be refrigerated, a door for the compartment, a cooling unit in the compartment subject to being frosted in use, an electric lamp in proximity to the cooling unit, a circuit for the lamp, means for closing the circuit upon the opening of the door and for opening the circuit upon the closing of the door.

2,234,541. REFRIGERATOR LATCH. Stuart W. Parsons, New Britain, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut. Application June 27, 1940, Serial No. 342,758. 5 Claims. (Cl. 292—332.)



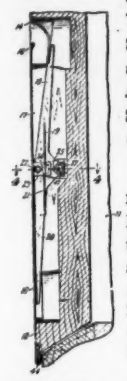
1. A refrigerator latch including a frame having an abutment thereon, a bolt pivotally secured to said frame, a plunger pivotally secured to said bolt, a sear on the plunger engageable with the abutment for retaining the bolt in unlatched position.

2,234,571. REFRIGERATION. Alex A. McCormack, Dayton, Ohio, assignor, by mesne assignments, to General Motors Corp., a corporation of Delaware. Application Nov. 29, 1932, Serial No. 644,841. 7 Claims. (Cl. 308—168.)



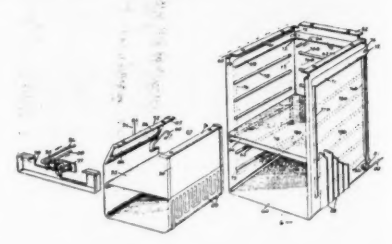
1. In a permanently lubricated vertical axis motor, in combination, a stationary part and a rotary part, said stationary part being secured to a stationary mounting and said rotary part being adapted to drive a load device exposed to the atmosphere.

2,234,651. REFRIGERATOR DOOR LATCH. Eric Pick, New York, N. Y., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application Dec. 15, 1937, Serial No. 179,839. 4 Claims. (Cl. 292—167.)



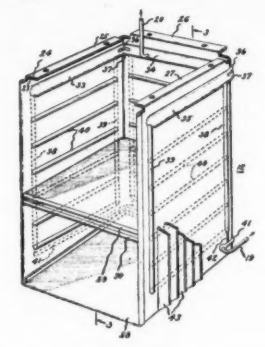
1. A latch for a door of a refrigerator including a self-latching latch bolt, a handle to be normally located substantially inside the plane of an outer suface of the refrigerator comprising a cup-shaped member to be oscillated on its side.

2,234,711. REFRIGERATING MACHINE. Christian Steenstrup, Schenectady, N. Y., assignor to General Electric Co., a corporation of New York. Application Dec. 1, 1937, Serial No. 177,495. 9 Claims. (Cl. 62—116.)



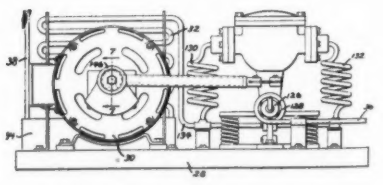
3. A refrigerating machine including a cabinet having a food compartment to be cooled, a cooling unit arranged within said food compartment, said cooling unit comprising a housing forming a closed chamber, means including a refrigerant conduit arranged on the walls of said housing for cooling the air within said compartment and for cooling the walls of said chamber.

2,234,713. REFRIGERANT EVAPORATOR. Christian Steenstrup, Schenectady, N. Y., assignor to General Electric Co., a corporation of New York. Original application Dec. 1, 1937, Serial No. 177,495. Divided and this application July 21, 1939, Serial No. 285,702. 6 Claims. (Cl. 62—126.)

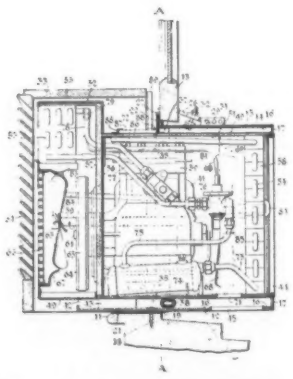


2. A flooded evaporator for refrigerating machines including complementary metal sheets secured together to form an upwardly extending wall, a refrigerant header formed between said sheets near the upper end thereof, a pair of substantially parallel passages extending from said header and formed in one of said sheets.

2,234,742. REFRIGERATING APPARATUS. Harry F. Smith, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application April 28, 1937, Serial No. 139,557. 8 Claims. (Cl. 230—34.)



1. Refrigerating apparatus including a closed circuit incorporating a compressor, a condenser, and an evaporator, said compressor incorporating an inertia-operated impeller.



2,234,771. AIR CONDITIONER. Paul B. Moore, York, Pa., assignor to York Ice Machinery Corp., York, Pa., a cor-

(Concluded on Page 19, Column 1)

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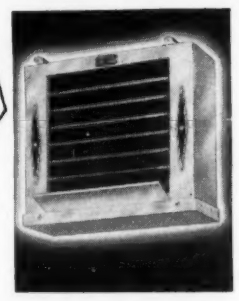

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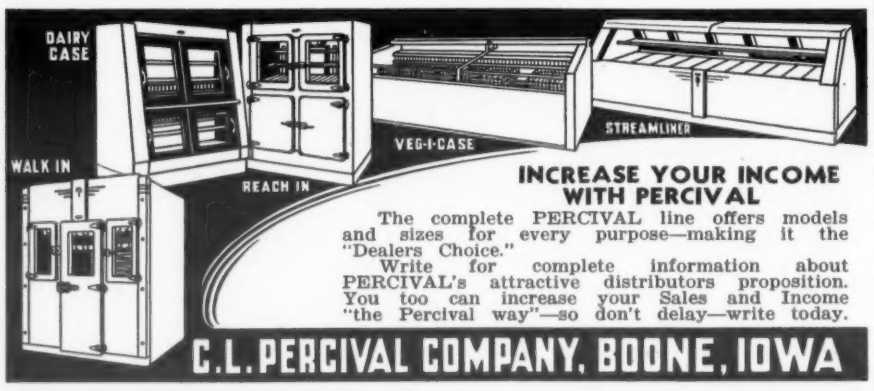

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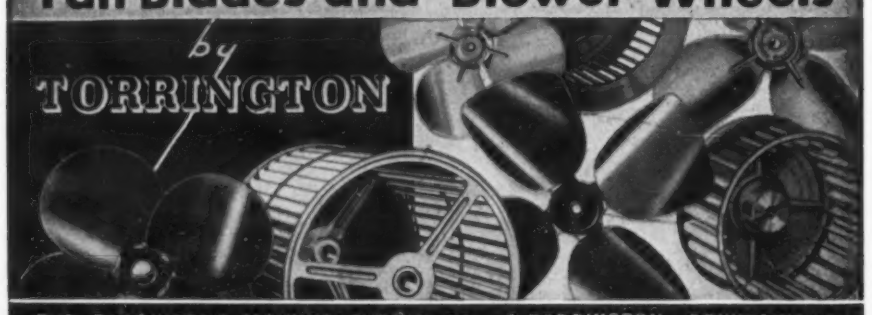

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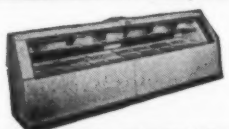

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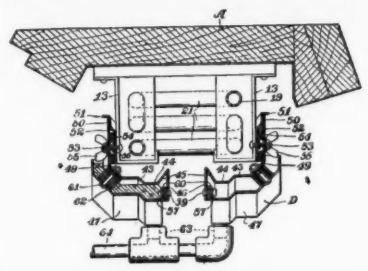
Patents (Cont.)

(Concluded from Page 18, Column 5)

poration of Delaware. Application June 24, 1939, Serial No. 281,022. 18 Claims. (Cl. 62—140.)

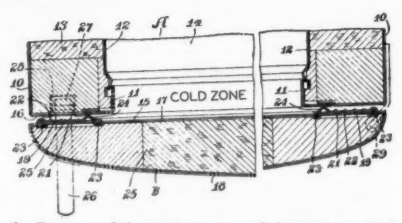
13. In a window mounted room air conditioner, the combination of a casing subdivided and ported to afford a room air circuit path and an external air circuit path isolated from each other.

2,234,846. REFRIGERATOR DRIP PAN. Herman J. Strobush, George H. Platten, and Donald Swanson, St. Paul, Minn., assignors to Seeger Refrigerator Co., St. Paul, Minn., a corporation of Minnesota. Application Sept. 20, 1937, Serial No. 164,742. 3 Claims. (Cl. 62—99.)



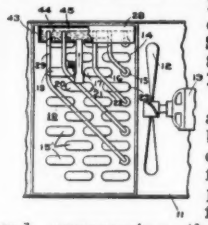
2. In a refrigerating case, an elongated coil, a pair of spaced parallel baffles extending beneath said coil, each of said baffles including an upper and a lower plate member in spaced relation with corresponding portions substantially parallel.

2,234,847. REFRIGERATOR CONSTRUCTION WITH LATCH AND HINGE MEANS OUT OF COLD ZONE. Enoch Swedman, St. Paul, Minn., assignor to Seeger Refrigerator Co., St. Paul, Minn., a corporation of Minnesota. Application Sept. 4, 1936, Serial No. 99,388. 2 Claims. (Cl. 220—9.)



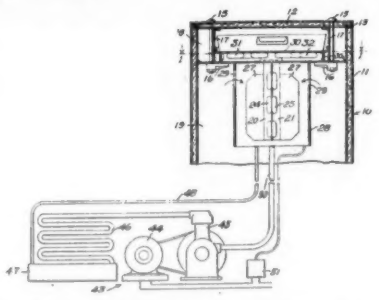
1. In a refrigerator, a refrigerator cabinet having inner and outer metallic coverings, a door opening in said cabinet having a flat surface surrounding the same, said outer covering extending partially over said flat surface, a non-metallic breaker strip connecting said coverings closely adjacent said door opening.

2,235,049. COOLING APPARATUS. Frank P. Taugher, Clayton, Mo., assignor to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., a corporation of Pennsylvania. Application May 29, 1935, Serial No. 24,001. 8 Claims. (Cl. 62—126.)



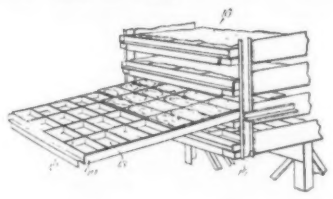
1. In refrigerating apparatus, the combination of an evaporator, a compressor for withdrawing vaporized refrigerant from the evaporator and compressing the same, means for condensing the compressed refrigerant, expansion valve means for reducing the pressure of the condensed refrigerant and discharging the same.

2,235,125. REFRIGERATION MEANS AND METHOD. Viggo V. Torbensen, Cleveland, Ohio. Application April 5, 1939, Serial No. 266,037. 9 Claims. (Cl. 62—116.)



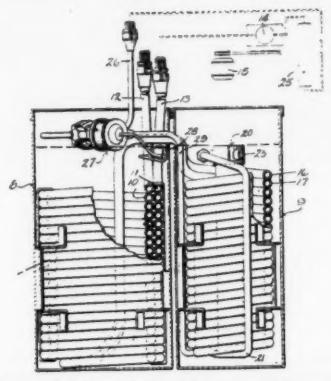
1. In a refrigerator, in combination, a main casing, a horizontal panel in said casing dividing the interior thereof into an upper and a lower chamber, a horizontal evaporator mounted on said panel and spaced above the same in said upper chamber, an ice tray overlying said horizontal evaporator in heat exchange relation therewith.

2,235,209. METHOD OF FREEZING AND PACKAGING FOODS. Robert P. Fletcher, Jr., Glencoe, Ill., assignor to Booth Fisheries Corp., Chicago, Ill., a corporation of Delaware. Application April 14, 1938, Serial No. 201,988. 5 Claims. (Cl. 62—170.)



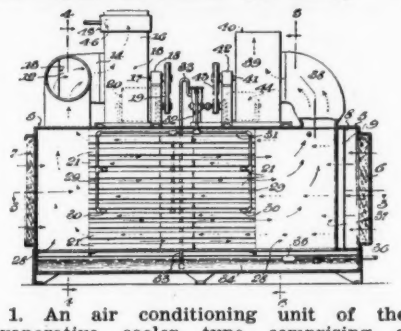
4. The method of preparing foods in irregular sizes and shapes for the market which consists in placing in a relatively fragile open top container said food without attempting a regular arrangement thereof whereby some portions project above the side walls and portions of container are unfilled, then placing the container in a rigid metal form to compress and rearrange the food so that the container is completely filled and then quick freezing said food.

2,235,244. DISPENSER FOR REFRIGERATED BEVERAGES. Arthur D. Ames, Galesburg, and William E. Richmond, Kenilworth, Ill., assignors to Automatic Canteen Co. of America, Chicago, Ill., a corporation of Delaware. Application Nov. 22, 1939, Serial No. 305,588. 7 Claims. (Cl. 62—141.)



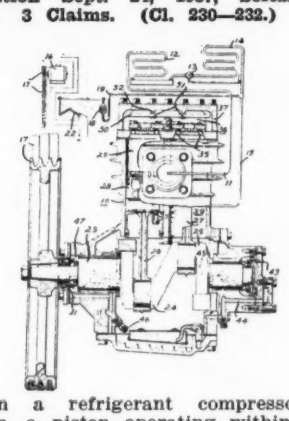
1. In a device of the character described, a multiple heat exchanger comprising a pre-cooling section and a flash-cooling section for liquid to be refrigerated, said sections comprising liquid conduits connected together in series and complementary refrigerant conduits connected together in series.

2,235,607. AIR CONDITIONING APPARATUS. Thomas W. Carraway, Dallas, Tex. Application Aug. 25, 1938, Serial No. 226,808. 20 Claims. (Cl. 62—6.)



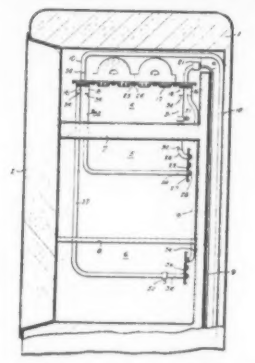
1. An air conditioning unit of the evaporative cooler type comprising a hollow elongated casing open at its respective ends for ingress of air; a vertically disposed cross header connecting a pair of side headers at one end of the casing; a pair of side headers at the other end of the casing and joined above the casing by a horizontal cross header; a plurality of horizontally disposed vertically spaced narrow flat air conveying ducts communicating between the respective pairs of side headers.

2,235,962. REFRIGERATING APPARATUS. James R. Hornaday, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application Sept. 24, 1937, Serial No. 165,551. 3 Claims. (Cl. 230—232.)



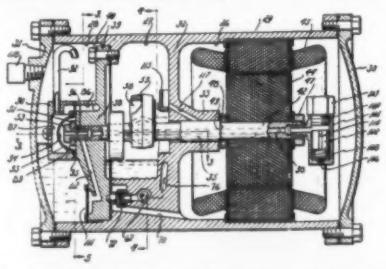
1. In a refrigerant compressor, a cylinder, a piston operating within said cylinder, a cylinder head, a discharge port between said cylinder and cylinder head, an outlet for the compressed refrigerant, and a sound deadening baffle suspended substantially centrally within said cylinder head and substantially out of the path of refrigerant flow.

2,235,995. REFRIGERATING APPARATUS. William W. Higham, Detroit, Mich., assignor to Universal Cooler Corp., Detroit, Mich., a corporation of Michigan. Application June 2, 1939, Serial No. 276,941. 10 Claims. (Cl. 62—95.)



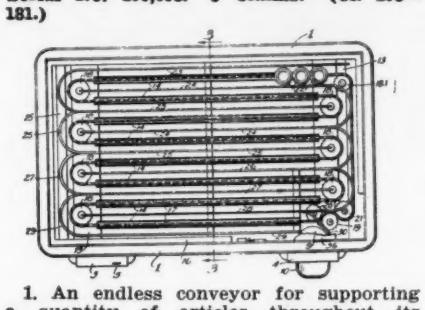
1. In a refrigerating system, the combination of a strip of metal having a plurality of passages running lengthwise therethrough in heat exchange relationship substantially from end to end of the strip, said strip being fashioned into runs or coils to form a primary cooling unit.

2,236,068. REFRIGERATING APPARATUS. Ralph W. Doeg, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Application April 24, 1939, Serial No. 269,598. 9 Claims. (Cl. 230—58.)



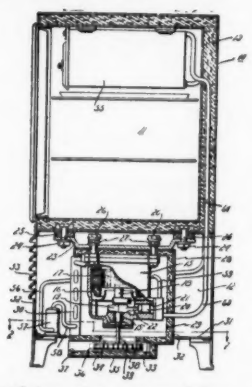
1. A refrigerating apparatus comprising a casing having a partition for dividing the casing into a high pressure compartment and a low pressure compartment, a shaft journalled in said partition, a motor and a compressor in said casing and connected to said shaft whereby the compressor is operated upon the rotation of the motor.

2,236,100. CONVEYOR FOR VENDING MACHINES. Karl W. Karnopp, Waukegan, Ill., assignor, by mesne assignments, to The Kalva Venders, Inc., a corporation of Illinois. Application March 31, 1938, Serial No. 199,098. 5 Claims. (Cl. 198—181.)



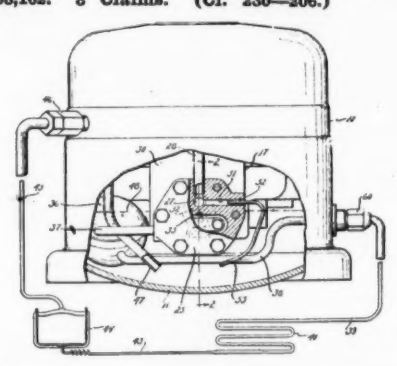
1. An endless conveyor for supporting a quantity of articles throughout its length and for carrying said articles to an unloading mechanism comprising an endless carrier forming a tortuous path including straight sections and curved sections joining said straight sections.

2,236,111. REFRIGERATING APPARATUS. Lawrence A. Philipp, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Application Oct. 21, 1938, Serial No. 236,155. 4 Claims. (Cl. 62—116.)



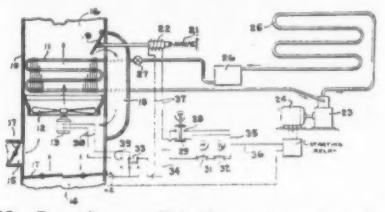
1. A refrigerator comprising a sound insulated housing having an opening in a wall thereof, a condenser mounted in said opening, a motor-compressor unit received in said housing, a fan in said housing and having driving connection with said unit.

2,236,112. REFRIGERATING APPARATUS. Lawrence A. Philipp, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Application Feb. 24, 1939, Serial No. 258,162. 8 Claims. (Cl. 230—206.)



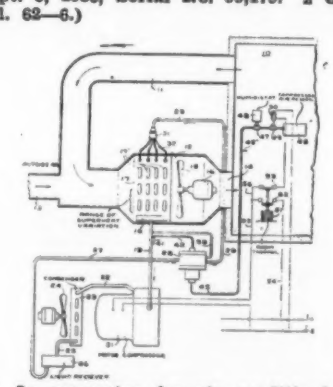
1. In a refrigerating apparatus comprising a compressor having a cylinder and a piston, said cylinder having an intake chamber for gaseous refrigerant, a separating chamber located adjacent the cylinder and communicating with said intake chamber, by a passage, means for delivering low pressure gaseous refrigerant containing lubricant to said separating chamber for separating the lubricant therefrom.

2,236,190. AIR CONDITIONING APPARATUS. Edward R. Wolfert, Wilkinsburg, Pa., assignor to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., a corporation of Pennsylvania. Application Feb. 6, 1935, Serial No. 5,211. 13 Claims. (Cl. 236—44.)



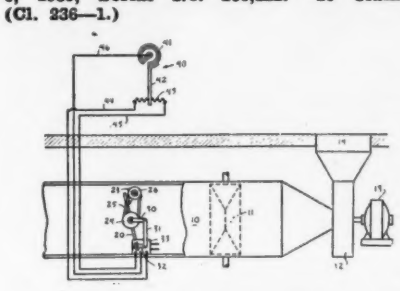
13. In air conditioning apparatus for an enclosure, the combination of means for cooling air and delivering the same to the enclosure, said cooling means being adjustable from a first condition of operation to a second condition of operation to increase the ratio of latent heat removal to sensible heat removal.

2,236,191. AIR CONDITIONING APPARATUS. Edward R. Wolfert, Springfield, Mass., assignor to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., a corporation of Pennsylvania. Application Sept. 3, 1936, Serial No. 99,179. 2 Claims. (Cl. 62—6.)



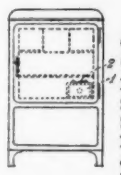
1. In apparatus for air conditioning an enclosure, the combination of an evaporator into the enclosure, a compressor having its inlet in unrestricted communication with the evaporator so that the pressure in the evaporator is variable dependent upon operating conditions of the apparatus.

2,236,249. DAMPER OPERATING SYSTEM. Alwin B. Newton, Minneapolis, Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a corporation of Delaware. Application March 6, 1939, Serial No. 260,122. 10 Claims. (Cl. 236—1.)



3. In a device for controlling the flow of a fluid medium through a conduit, a flow controlling damper, means rotatably mounting said damper within the conduit, means carried by the damper for varying the resistance to flow of fluid between one edge of the damper and the adjacent wall of the conduit whereby movement of the damper is caused by the flow of fluid.

REISSUES



Reissue 21,748. TEMPERATURE CONTROLLED CONTAINER. Charles A. Stemme, Large, Pa. Original No. 2,223,234, dated Nov. 26, 1940, Serial No. 276,135, May 27, 1939. Application for reissue Jan. 4, 1941, Serial No. 373,184. 3 Claims. (Cl. 62—89.)

PATENTS

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A complete line in all sizes
CHICAGO SEAL CO.
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OVALINE HAND-WHEEL
Its exclusive oval shape provides a really natural gripping surface.
RECOMMENDED AND SOLD BY LEADING JOBBERS
HENRY
BALANCED-ACTION DIAPHRAGM PACKLESS VALVES
HENRY VALVE CO.
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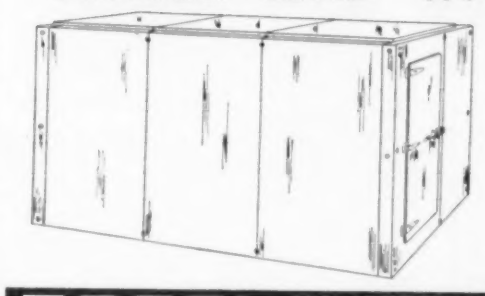
AMANA
MAKES SENSATIONAL SALES RECORDS!
New Amana "Plug In" Case. 6 ft. and 8 ft. sizes. 5-year guaranteed compressor unit. Triple glass front. Hard rubber doors and slides. Cork board insulation. An unmatched value. Write Amana now for facts on COMPLETE line. Desirable territories available to distributors.
AMANA SOCIETY
Amana, Iowa

You can SPEED UP your flaring!

• The new Imperial Flaring Tool with slip-on yoke, provides ease and speed of operation never before attained in a flaring tool.
The yoke is made so that it can be slipped on over the bar without twisting or turning. The inside edges of the yoke are slotted so that once in position a slight turn holds it in place on the bar. Yokes are made of forged steel.
An additional advantage of this tool is the construction of the bottom of the yoke, which permits flares to be made where there is little space between nut and the end of tubing. Fin tubing sometimes offers this problem.
Flares soft copper, brass or aluminum tubing.
No. 195-F Imperial Flaring Tool, flares ¼", 5/16", 3/8", ½" and 5/8" O. D. tubing. Price each.....$4.25
Also available for all other sizes of tubing.
THE IMPERIAL BRASS MFG. CO., 565 S. Racine Ave., Chicago, Ill.
IMPERIAL VALVES • FITTINGS • TOOLS CHARGING LINES • FLOATS STRAINERS • DEHYDRATORS ORDER FROM YOUR JOBBER

'ARMOR-CLAD' WALK-IN COOLER



★ALL STEEL EXTERIOR
★LOW IN COST
(Due to volume production)
★REAL FLEXIBILITY
(Easily enlarged by adding sections)
★EASY TO ERECT
(2 unskilled workmen sufficient)
★SMALL STANDARD-SIZE SECTIONS
(Portable and easy to handle)
★UNLIMITED RANGE OF SIZES
★PROMPT SHIPMENT
FOGEL REFRIGERATOR COMPANY • Since 1899
Philadelphia, Penna.

At One of The All-Day Shows Held In the Southeast

Well wined and dined were the nearly 100 members of the refrigeration trade who attended the Refrigeration Show put on at the Hotel Bankhead in Birmingham, Ala. by manufacturers' representatives and refrigeration supplies wholesalers in that area. The show was one of three held in the southeast last month.

* * *

Manufacturers' Representatives Promote Refrigeration Parts Shows In Southeast

ATLANTA — Two manufacturers representatives for refrigeration products, cooperating with wholesalers of refrigeration parts and supplies, staged refrigeration trade shows last month in Atlanta, Birmingham, Ala., and Montgomery, Ala.

E. V. Dunbar, representing Ranco, Virginia Smelting Co., and Wolverine Tube Co.; and J. E. Parker, representing Automatic Products Co., Bush Mfg. Co., Day & Night Mfg. Co., Chicago-Wilcox Mfg. Co., and the Kold-Hold Mfg. Co., were the promoters of these shows.

In Atlanta the cooperating sponsors were two parts and supplies wholesaling firms—Bowen Refrigeration Supplies, Inc., and Leo S. Bosarge Co.

In Montgomery the meeting was sponsored by the Teague Hardware Co., and was the third of such meetings the Teague company had sponsored.

In Birmingham the two jobbers who cooperated were the Auto Service Co. and the Refrigeration Supplies Distributors.

Through the cooperation of the Virginia Smelting Co. printed announcements of the meetings were sent to all members of the trade in the vicinity of the cities in which the meetings were held.

The meetings were held in hotels, with part of the day left open for inspection of products, and part given over to discussions of products and application problems. Dinner and cocktail hour at the close of the day was followed by motion pictures, and then the displays were kept open until midnight.

Speakers at the Atlanta meeting, in addition to Mr. Dunbar and Mr. Parker, were L. C. Mitchum, the Texas Co.; Ray Luber, L. H. Gilmer Co.; P. O. Domke, Mueller Brass Co.; Howard Jones, Ranco, Inc.; A. D. Barr, Air-Maze Corp.

Other factory representatives who cooperated in the promotion of the meeting included: W. W. Conard, L. H. Gilmer Co.; W. Rapp, Mueller Brass Co.; Cliff Boyd, representing Henry Valve Co. and Dole Refrigerating Co.; Tom Hart, Detroit Lubricator Co.; Frank Ellis, Radiator Specialty Co.; N. E. Jennison, Penn Electric Switch Co.; and Henry Gullatt, Ansul Chemical Co.

At the Montgomery meeting Messrs. Dunbar, Parker, Barr, Jones, N. V. Nutting of Gates Rubber Co., and Harry Dawson of Mueller Brass Co. were the speakers. Afternoon meeting was featured by a quiz session in which the guests competed for prizes.

Several of the same men who spoke at the Atlanta and Montgomery meetings also addressed the Birmingham meeting. New speakers included W. H. Mandy, The Texas Co.; and W. W. Conard, L. H. Gilmer Co. An "information please" session during the evening combined information with entertainment.

Motion pictures shown by Mr. Dunbar at the meetings were a colored reel depicting the manufacture of refrigerants in the Virginia Smelting Co. plant at West Norfolk, Va., and the pictures of the All-Industry Exposition taken by Herman Goldberg.

Don't Let Appliance Market Get 'Flabby' Through Lack of Promotional Efforts, Bolin Urges

(Concluded from Page 1, Column 5)

pany has adopted a definite philosophy toward promotions and promotional planning that it believes is ideally suited to today's conditions. Its chief characteristic is "adaptability."

Denouncing adopting of a "do-nothing attitude because we don't know where we'll be three months from now," he advocated, instead, that now is the time to plan, to assume that "three months from now we'll have a given set of conditions, and here is the way we propose to meet them."

In describing the manufacturer-distributor-dealer relationship, he emphasized that it is the consumer, not the dealer, who is the ultimate customer. He also discussed advertising to the consumer; advertising to build dealer acceptance; distributor operating plans; and other means used by the manufacturer to complete the manufacturer-distributor-dealer-consumer chain.

"The job of promoting appliances in today's market," he pointed out, "is to plan within each of these requirements." The plans, materials, tools, in each classification must be kept as simple as possible, and must be geared to today's market. A year ago, for example, a major aim of appliance promotion was to build floor traffic for the dealer; today the need is not so much for building traffic as to sell the "quality story" of the product, the reasons why people should buy appliances, and "why they should buy yours."

Careful education of the entire field selling force is necessary, he emphasized, to combat the tendency to believe that the production situation is worse than it really is, and that there isn't much use promoting the business or trying to look ahead to the future.

"We believe that an industry as highly promotional as the appliance industry could quickly become flabby unless strong steps are taken to prevent it.

"We believe it essential for the field organization, including of course the retailer, to know the facts about the situation—how the manufacturer proposes to handle it, how he expects to handle promotion and advertising.

"We believe that frankness is necessary, for the simple reason that the known is never so disquieting as the unknown." He urged that retailers be given suggestions on what policies to follow in sales, what models to emphasize, and how to plan advertising so that it helps to build for the future.

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1568-1572 Coney Island Avenue,
Brooklyn, N. Y.

Feb. Dealer Sales Up Over Jan., U.S. Says

WASHINGTON, D. C.—Sales by 264 household appliance dealers reporting to the U. S. Bureau of the Census totaled $1,340,450 during February, an increase of 11% over the same month a year ago, and a gain of 6% over figures for January this year. For the first two months of 1941, sales by these dealers were 12% higher than in the same period of 1940.

Sales by all firms reporting to the survey, numbering 23,728 stores in 34 states, were up 12% in February over the same month of 1940, although the month was a drop of 4% from January figures. For the two months, total sales by the appliance dealers reporting were 13% higher than in 1940.

Ed Ross, Westinghouse, Now an Army Captain

EAST PITTSBURGH, Pa.—F. E. (Ed) Ross, refrigeration advertising manager for the merchandising division of Westinghouse Electric & Mfg. Co. and a captain in the U. S. Infantry Reserve, has been called to a year's active duty as an instructor in the army infantry school at Fort Benning, Ga.

Mr. Ross has been given a one-year leave of absence by Westinghouse, during which time his work will be handled by J. R. Clemens, who has been in charge of range promotion.

Appliance Retailers Fight Wis. Hours Law

(Concluded from Page 1, Column 1)

Wisconsin Retail Hardware Association.

Opponents of the bill argued that retail establishments cannot observe maximum hour provisions because they are a service industry, which must remain open long hours to satisfy the buying habits of the public.

Labor representatives joined with the author of the measure in defending it, declaring that its passage would equalize conditions among Wisconsin industries affected by the national wage and hour act because they are engaged in interstate commerce and those not affected by the federal law because they are engaged entirely in intrastate commerce.

Kelvinator Sales Gain With Fewer Dealers

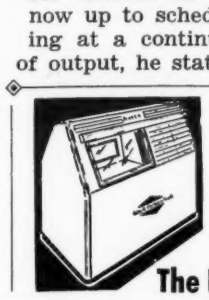
(Concluded from Page 1, Column 4)

ager. First-quarter volume this year already amounts to one half of the company's total volume last year, and is well ahead of the entire year's sales during 1939, Kelvinator's sales director declared.

Business so far during the 1941 fiscal year is running more than double that of the corresponding period in 1940, Mr. Pierce said, and is about four times that of the same period in 1939. Sales gain for the household electric refrigerator industry as a whole so far this year is about 39%, he added.

Important sidelight on the Kelvinator sales story, Mr. Pierce declared, is that the 100% increase this year has been achieved by 8¼% less dealers than in 1940, indicating a larger share of the business for individual retailers than actual sales-increase figures show.

Approximately 80% of this year's refrigerator volume is averaging more than $160 per unit, Mr. Pierce said, and this trend is becoming more pronounced all the time. Production for defense in Kelvinator plants is now up to schedule, and is progressing at a continually increasing rate of output, he stated.



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REOL
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Write to
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● Today in many refrigerated storage rooms the country over, large shipments of perishable foods are being held for reshipment or ageing.

● That, which guards these foods from spoilage, is this little valve — a dependable A-P Thermostatic Expansion Valve.

● Have you ever before realized the responsibility that rests in this little valve? It far outshines the mechanical and engineering perfection built into it by A-P.

● When you service or install equipment that guards perishable products insist on A-P Valves. They're Dependable. And fulfill their responsibility to you and to your customers — dependably.

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